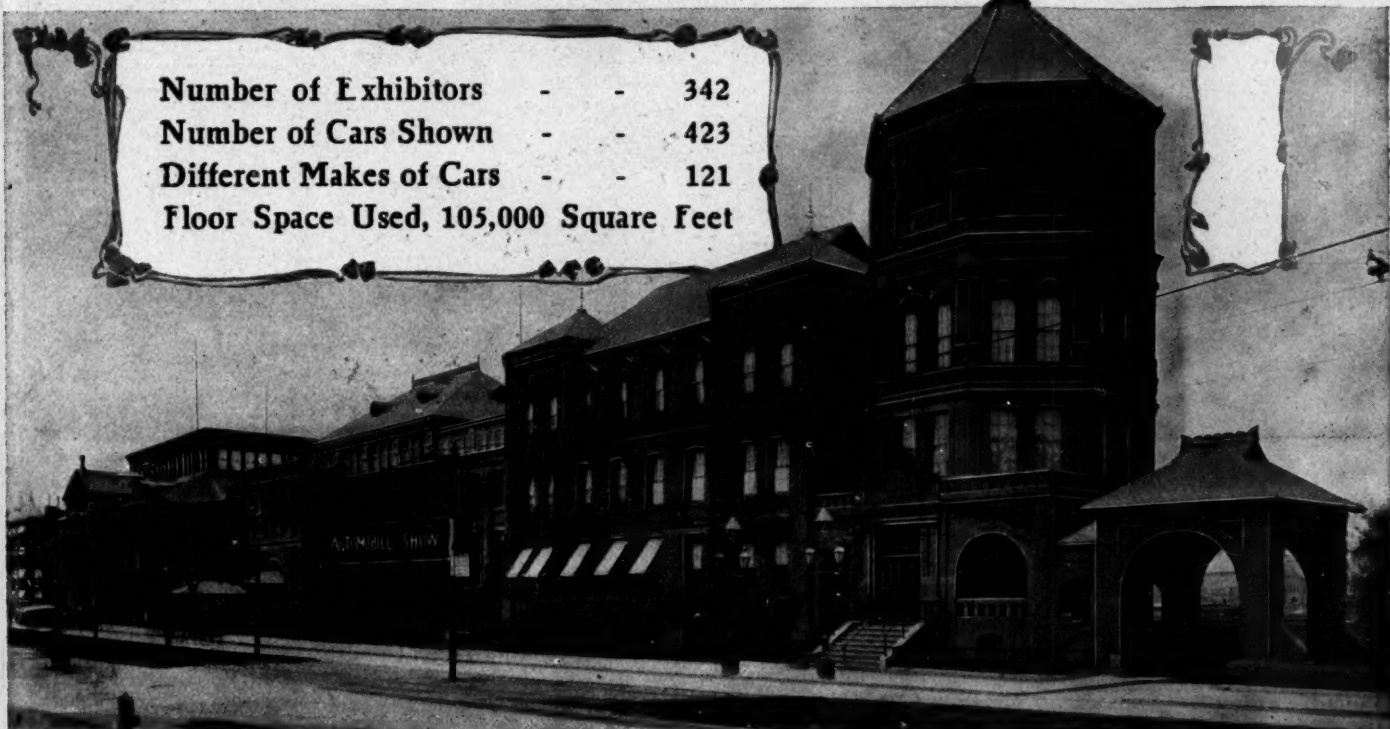


# MOTOR AGE

## HUB SHOW LARGEST OF THE WINTER

Number of Exhibitors	-	-	342
Number of Cars Shown	-	-	423
Different Makes of Cars	-	-	121
Floor Space Used, 105,000 Square Feet			



HORTICULTURAL HALL, ONE OF THE BUILDINGS IN WHICH THE BOSTON SHOW IS BEING HELD

**B**OSTON, MASS., March 9—The Boston motor car and power boat show opened here tonight in a blaze of glory. It was the fifth exhibition held in this city and it eclipsed every previous one by a wide margin. Thousands crowded into the building, for it was practically free night, tickets being given out complimentary by the hundreds. In some respects the show is larger than the ones held previously in other cities. There is 105,000 square feet of space filled up, which is a greater area than New York or Chicago had. In the number of exhibitors Boston stands at the head with 342. London had but 290, Chicago 270, the A. L. A. M. at New York 249 and the A. C. A. show 230.

As far as the number of cars are concerned there are more in this show than any other ever held in this country. All told some 423 machines are on view. Chicago ranked next with 359, the A. L. A. M. 238 and the A. C. A. 251. There are nearly as many here as were seen in both

New York shows. As to the attendance ago. The manufacturers have been coöperating with the dealers to enable the latter to get a full line of machines here. In a few instances there were delays in traffic but when the show opened nearly everyone had his full allotment.

Two halls are needed to house the exhibition. There is Mechanics' building with its vast area and also Horticultural hall a few blocks away. On the main floor of Mechanics' hall are the motor cars. There are a number in the balcony, too. Paul Revere hall in the same building was leased outright to the Pope company, giving that concern a larger space than any other concern. In the balcony of Mechanics' the accessories are located. The power boats are found down in the basement. Commercial wagons have Horticultural hall all to themselves with the exception of a big power boat some 60 feet long that stands in the center of the building. All the exhibitors have a generous share of space and they have ample room to show the best in their line. Some of them have the same spaces they had a year

The officers of the association worked hard for the success of the show. Manager Chester I. Campbell has not had an idle moment for many weeks and the other officers, President James A. MacAlman, of the Columbia; Vice-President George H. Lowe, of the Aerocar, and Treasurer Harry Fosdick, of the Thomas and Fiat, have had many hard problems to solve with Manager Campbell in treating everybody in such a way that there would not be a great many kicks coming. That they have accomplished their task to the satisfaction of all is testified to by the success of the show.

The one thing that brought forth expressions of admiration from the crowds is the beautiful decorations.



BOSTON'S SHOW, GIVING AN IDEA OF THE APPLE ORCHARD DECORATION EFFECTS

They are magnificent. Last year the halls were prettily decorated, but this time the management went further, with the result that it has a bower of beauty. Manager Campbell decided that New England could furnish ample features for such purposes, and in looking about him on his drives last year he was struck with the softness and beauty of an apple orchard in blossom. That decided him.

So tonight the visitors found themselves walking about in what was apparently an old-fashioned New England apple orchard with a lot of motor cars nestling about among the trees. The myriad of electric lights hid in the trees give just the shade of light to make it appear like a summer's day to the spectators.

In the grand hall the effect is seen to better advantage. For a canopy there are stretched back and forth streamers of red, white and blue woven together in such a way that it shades the big arc lamps and casts a glow on the entire scene. The trees with their pretty white blossoms are scattered about in just such a way as nature does the work.

There are not too many of them to be monotonous. And their branches are not too thick, nor yet too thin, to give the semblance of artificiality. Here and there one can be noticed with branches swaying, nodding approval as it were, because of the homage paid to the motor car.

The orchard effect is further heightened

by a network of trailing arbutus and vines that work in and out, the green leaves acting as a screen through which the light glimmered with a soft sheen. The buds present a rosy appearance, made so by the tiny lights that are skillfully embedded in their folds.

Railings dividing the spaces are of immaculate white and are all of similar design. They are just like fences to be seen about a well-kept farm. Pale green carpet gives the finish, for where it shows among the motor cars it closely resembles velvety grass.

With the throngs moving about, the lights being reflected from the brilliant coatings of the cars, the band playing lively tunes, and everyone smiling and apparently happy, it is a scene of animation that is only found on the opening night of the show.

#### WILL HAVE A \$1 NIGHT

On Wednesday night it has been decided to try the plan followed in other cities of having a \$1 evening. A new feature at shows is the stands for demonstrating cars. Each car has a space allotted and there is a sign on a stand about 5 feet in height showing the name of the machine so people will not err in getting a look at the cars in action outside.

Just within the door of Mechanics' is the Columbia space. Both gasoline and electrics are shown. There are eight cars

in all and two chassis. The 16-18, 24-28 and 40-45-horsepower gasoline cars are shown in touring styles. There is also the combination electric-gasoline car. A handsome limousine is also there and electric brougham, landaulet and victoria. The next space is given to Fiats. There is a touring car and a limousine, also a chassis of the powerful racer. The Franklin next on the aisle has its four-cylinder runabout and two of the same kind of touring cars, also a four-cylinder chassis.

The Thomas display by the Harry Fostick company is a fine one. There are five touring cars—three Flyers and two Fortys. One of the runabouts of each make is also shown. Chassis of both cars also are presented. There also is a limousine of the Flyer. The Baker electric is shown in this space, too, the Fostick company handling it. The Napier company has a splendid landaulet with a body of red that is a fine specimen of the coach-builder's art, there being no leather about it except in the very rear. There also are a four and a six-cylinder runabout shown. Also a six-cylinder chassis that is probably the lengthiest in the show. Then come the Ramblers. There are four touring cars—two of each model, the two and four-cylinders. There are two runabouts, one of each make, and a chassis of each, making a very complete line.

The Maxwell is on the right of the aisle and there are four of the smaller





GENERAL VIEW OF BOSTON SHOW—CARS ON MAIN FLOOR OF MECHANICS' HALL

cars, two runabouts and two speedsters, shown. The company also exhibits its four-cylinder touring cars in two models. There is likewise a chassis of both the runabout, speedster and the touring car. The Ford is next in line. The six-cylinder touring car takes up one section and the rest is given over to the runabouts, there being three of them. Two chassis, one of the runabout and the other the six-cylinder, are also there. The Morrison company in the next space has the Stearns and Oldsmobile cars. There are two admirable specimens of each and also the chassis for each car. A double space gives lots of room for the cars and chassis. The Bay State Forty is the next car there, the company showing a touring car and a chassis. The line of Peerless cars is very complete. It comprises touring cars of the 30 and 45-horsepower models, a 30-horsepower Berlin, a 35-horsepower limousine, a roadster of that power and chassis of both models. The Marmon company has two touring cars and a chassis. One of the machines is an eight-cylinder. The Locomobile line is well brought out. There are both the 15-20 and 30-35-horsepower cars shown. Touring cars of each, a landaulet of the former, a roadster also, and two chassis showing the mechanism of either model, take up the space. The Premier, in the next booth, shows a touring car, a speedster and a chassis, while right next is the Northern and Pullman,

there being one model of each, with two chassis. The Sturtevant automatic car then looms up, there being one model on view. Haynes cars in touring and limousine models also a runabout with two chassis make up the Henshaw exhibit.

#### REOS, WAYNES, NATIONALS

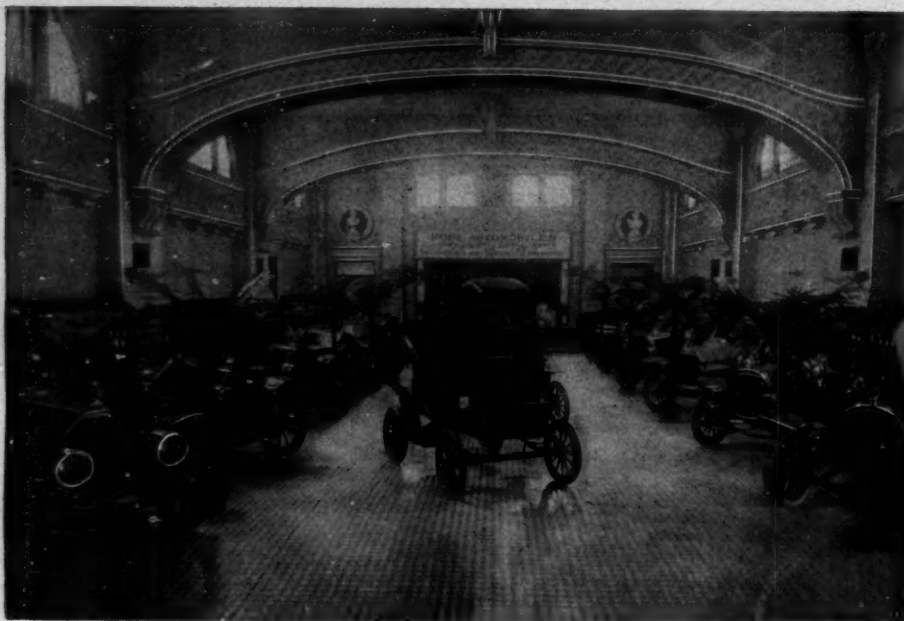
Across the way the Linscott company has Reos, Waynes and National cars. There are twelve cars in the big area. Reos are shown in both runabout and touring models of the different horsepowers. The National has a fine line of four and six-cylinders, one car being built to carry nine people. The Wayne also shows three models, all touring cars. There are chassis of each make, too. The Waltham-Orient has a buckboard, and two touring cars and the chassis of its two models, and the Harrison car is there with both a touring model and a chassis. The Buick has a large space, showing five cars in all. The runabout attracts much attention because it is so high from the ground. There are two touring cars and a limousine besides a couple of chassis. The Glide is shown in two models and a chassis and the Lozier exhibit comprises a touring car, limousine and a chassis. The American booth is occupied by a touring car, a runabout and chassis and right next to it are two Panhard cars.

The Ross steamer built by Louis Ross, of Newton, winner of the Dewar and other

prizes 2 years ago at Ormond, is shown in runabout and touring car style. There also is an engine in the space. That completes the cars shown in this section. From there one enters the grand hall where festivals are held. This section is shaped in a square and the band concerts are held there. Seats also are provided in the balcony for the visitors to sit down and watch the moving panorama beneath.

The main floor is divided into eight sections, cut by two aisles forming a cross. There also is a big stage and balconies. On the stage there are six Stanley steamers in varying styles. The other half is given to the Butler company, handling the Cleveland and Pierce-Racine cars. There is shown a Cleveland touring car, also a gentlemen's speedster and a chassis of this make. The Pierce-Racine is shown in two touring cars and a chassis. The main floor section is occupied by the White, Winton, Royal Tourist, Packard, Cadillac, Knox, Aerocar, Cameron, Pierce Arrow, Autocar and Studebaker. The White shows both its 20 and its 30-horsepower models, the latter this year's big car. There are touring cars and limousines and a runabout. In all seven machines are on view. The Winton has a fine line of both its models in touring and runabout bodies also a limousine. There are also chassis of each type on the stand.

Pierce Arrow cars attract attention on this floor because of the variety of them.



POPE EXHIBIT IN ALL ITS GLORY IN PAUL REVERE HALL

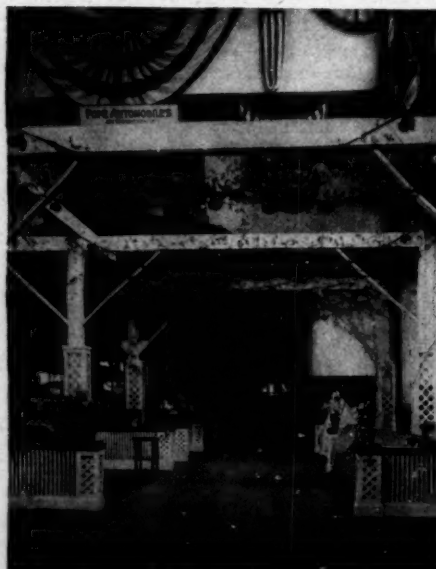
There are three touring cars, the 28-32, the 40-45, both four-cylinder, and the big six-cylinder. There also is a fine limousine of the 40-45-horsepower type and a chassis of both four and six-cylinder. The nicely-polished chassis seen at the other shows is at the Packard space, where also is exhibited the touring car of that make and a limousine. There also is one of the Packard runabouts. In the same block is the Cadillac models. There is the touring car and runabout of the one-cylinder type and also the new four-cylinder machine. Two chassis are there, too. The Knox line is quite complete. The big four-cylinder that was new last year is shown in two touring cars. There also is the two-cylinder runabout and the convertible surrey. The company shows two chassis of its models. The Royal Tourist has a good exhibit. There are two touring cars and a limousine. There also is a fine chassis. In the Aerocar space are shown four cars, all touring cars, both air and water-cooled. There are two chassis. The Studebaker has three cars, all touring models, and a chassis, and the Crawford has two touring cars and chassis. The Autocar models make an attractive display with the runabout and touring cars. They, too, have a chassis.

The Matheson exhibit has two touring cars and a beautiful chassis, and the Mitchell space next to it has one car and chassis. The Welch space has two fine cars and one chassis. No better display is made than by the Stevens-Duryea. There is the runabout, also two touring cars of the four-cylinder, a six-cylinder model and two chassis. There is a limousine. On either side of the stage on raised platforms is a DeLuxe and an American Mercedes. The Corbin is in close proximity. The company shows both touring cars and runabout and there is an excellently-finished chassis. The Grout cars on view comprise two touring cars and a chassis. The

Babcock electric is shown there. The Berliet and Stoddard-Dayton share the next location. There are two touring cars of the latter and two of the former, also a Berliet limousine. Chassis of each are also there.

#### CARS IN THE BALCONY

Up in the balcony is found another bunch of cars. The Jackson line comprises three touring cars and two runabouts. There are two chassis. In the same space is shown the Logan car, one model being there. The Shawmut, one of the latest in the field, is in the balcony. There are three cars, all of 40 horsepower. One is a runabout, another a touring car and the third a limousine. A chassis is on hand. The Dragon company makes its first appearance in a Boston show this year and is in the balcony. It shows two touring cars, and the Golden Dragon and a chassis completes the list. The Moon car has a place with two models. So has the



LOOKING TOWARDS THE ENTRANCE

American Mors, showing a touring car and a limousine. There are two Berkshire models and a chassis of the same make in the balcony. The Frayer-Miller was late getting in so it had to go in the basement where two cars are exhibited. The Acme has one car and a chassis at the show. The St. Louis has one touring car and a chassis here and the Mora is represented by a roadster and chassis. The Triumph has two touring cars and there also is the Deere car and a chassis in the show. The Atlas runabout is shown, too. There is one model of the Aurora and one Viking.

Paul Revere hall in the upper part of Mechanics' building is really a show in itself. The Pope cars are located there and having ample room it is easy to move about among the models. The company has the largest single exhibit. The Pope-Toledo is shown in four models and a raceabout. Three are touring cars and the other is a limousine. The Pope-Hartford has four models—one runabout and the rest touring cars. There are three Pope-Tribune cars, all touring models. The remainder of the line comprises the Waverley electric cars of which there are five. There is a landaulet, brougham, victoria, phaeton and depot carriage. Chassis of the Toledo, Hartford and Tribune are on view, making more than a score of vehicles for the visitors.

Other cars at the show scattered in various spaces showing one or two models are the Queen, Walker, Pungs-Finch, Bailey, Compound, Lambert, Gearless, Holmes, Crest, Heymen, Austin, Springfield, Pennsylvania, Elmore, Dolson, Mason, Reliance, Kisselkar, De Dion-Bouton, Brouhout, Clark, Columbus, Rauch-Lang. That completes the cars on exhibition, all of which are in Mechanics' hall and which attract the attention of the multitudes.

The great scarcity of freight cars nearly put the exhibit that had been prepared by the Aerocar Co. of Detroit for the Boston show on the junk pile. The car in which the Aerocars were shipped went out of commission at St. Thomas, Ont., and the exhibit had to be turned over to an express company in order to reach Boston in any kind of time for the opening of the show. Much difficulty and a delay of several days was encountered in securing a 40-foot car suitable for holding all three models. But the shipment left and by the time it ought to have been at Buffalo a tracer found it had just crossed the river into Canada. In the meantime the freight car had been in the repair shop, where workmen had been trying to bolster it up so it could make the trip to Boston. It left Windsor with a promise from the railroad company that a daily report would be given on its progress. Nothing more was heard until 2 days later a telegram came, stating that the freight car had broken down at St. Thomas and could not go forward. By a piece of good fortune the motor cars were not in-



jured, but a transfer would be necessary. The only thing that remained was to send the shipment forward by express.

While all of the principal makes of cars which were exhibited at the earlier shows in New York and Chicago are on display at the Boston show, the notable feature of the exhibition is the large number of cars which, although well built and designed, depart to a marked degree from standard lines. Quite a number of interesting sundries are also on exhibition which have not been exhibited at any of the other shows; in fact, it may be said that the Boston show, owing to its lateness is, so far as American cars are concerned, the "last word" of the season. The motor boat section is especially fine, a great feature being the number of large cabin cruising boats shown. The transportation and placing in position of these must certainly have been a great undertaking, as for instance, Sinner, exhibited by Murray & Tregurtha in the Horticultural hall annex. This is a cruising boat of over 50-foot waterline and of about 10-foot beam and which measures from keel to deck something over 8 feet.

The Bay State Forty, manufactured by the Bay State Auto. Co., of Boston, makes its debut at this show. It is a car built on standard lines, having shaft drive and three-speed sliding gear. The motor has inlet and exhaust valves on the same side of the cylinder. Ignition is by Splitdorf high-tension magneto in conjunction with a coil and storage battery. There also is another complete system using a distributor and single coil which is connected to a second set of plugs. A very interesting feature of this car is the three-point ball and socket suspension of the motor. Although this car has no really surprising features, it shows care in design and in details of construction that would lead one to expect that it will give a good account of itself during the coming season.

#### FOLLOWS STANDARD LINES

The Shawmut car, manufactured by the Shawmut Motor Co., of Stoneham, Mass., is built for the most part on standard lines but has a number of interesting minor features. The motor, rated at 40 horsepower, has cylinders  $4\frac{1}{4}$  by  $5\frac{1}{2}$  inches. Ignition is by Bosch magneto. The carbureter is of special design and of the company's own manufacture. It may be described briefly as of the throttle compensated type, being without spring-actuated air valves. The clutch is of the small diameter multiple disk type and is composed of fifty-one disks. It has been so designed it can be removed from the car in its entirety by the removal of eleven bolts without disturbing the motor or gear case. The transmission is of the selective type, giving four forward speeds and reverse with direct drive on third. Shaft drive, with a specially designed rear axle, is employed. The gasoline is fed to the carbureter from a tank at the rear by



UNDER THE OLD APPLE TREE

means of the exhaust pressure. Hess-Bright bearings are used throughout. Krupp steel is employed wherever it is considered advisable.

The Cameron, manufactured by the Cameron Car Co., of Brockton, Mass., is a light four-cylinder air-cooled machine, with valves placed in an explosion chamber on top of the cylinder and having their stems horizontal. They are operated by long vertical rocker arms which are pivoted at about the center of the cylinder and whose lower ends extend down to the camshafts on their respective sides of the crank chamber. Ignition is by single coil and distributor, the latter being located on a vertical shaft between the second and third cylinder. The transmission is by shaft drive with the gear case on the rear axle. The bevel pinion of the propeller shaft engages with a bevel gear on a transverse shaft. On this same transverse shaft is a set of three sliding gears. These are so mounted that the combina-

tion of bevel gears and transverse shaft can be moved bodily together with its bearings in a longitudinal direction. The set of three gears also is capable of a motion along the shaft. On the differential casing is a large spur gear of the same pitch as that of the three sliding gears. In order to change gears it is necessary simply to move the longitudinal shaft and its gears forward out of engagement with the large gear, then slide it along the proper distance and engage the gear wanted by moving the transverse shaft again to the rear. Among other advantages claimed for this type of gear is that in coasting all gears can be thrown out of mesh and thus the friction is reduced to a minimum.

#### USES FRICTION DRIVE

The Holmes Motor Vehicle Co., of East Boston, Mass., shows two models employing friction drive. One of these is a four-cylinder touring car with final drive by side chains. The other is a shaft-drive runabout with double opposed two-cylinder engine, the motor shaft being transverse of the chassis and having at its right side the friction disk. The friction wheel is mounted on the right and its axle is a continuation of the propeller shaft.

One of the greatest novelties is the Bailey four-cylinder two-cycle revolving cylinder motor. This is shown applied to a runabout with Hessler transmission, which gives two speeds forward and reverse. The motor is air-cooled, of  $4\frac{1}{2}$ -inch bore by 4-inch stroke. Ignition is by a Pittsfield high tension magneto. The details seem to be carefully worked out; in fact, the machine is no experiment, having been used on the road for upwards of a year. Admission of the charge from the carbureter is through the hollow front axle of the motor and distribution of the current to the plugs is accomplished by using the motor itself to form the revolving member of the distributor, the contact



ACCESSORIES IN BALCONY OF MECHANICS' HALL

# LIST OF EXHIBITORS IN BOSTON RECORD-BREAKING SHOW

## GASOLINE CARS

Butler Motor Car Co.—Pierce-Racine, Cleveland, Rapid, Rapid commercial  
 Boston Auto Exchange—Crawford  
 Bay State Auto Co.—Bay State Forty, Queen  
 Boston Motor Co.—Pungs-Finch, Acme  
 Buck & Price Co.—Rainier  
 Bond Bros. Co.—Deere-Clark  
 Blake, E. P., Co.—Jackson, Logan, Logan truck, Logan light delivery wagon  
 Berkshire Auto Co.—Berkshire  
 Bailey Automobile Co.—Bailey  
 Brown, George M.—Apperson  
 Curtis-Hawkins Co.—Grout  
 Columbia Motor Vehicle Co.—Columbia  
 Crown Motor Car Co.—Glide, Aurora  
 Concord Motor Car Co.—Compound  
 Castle, H. C. & C. D.—Lozier  
 Coburn-Heath & Co.—Cameron, Triumph  
 Commercial Truck Co. of America—Commercial trucks  
 Consolidated Mfg. Co.—Yale-California  
 Crouch Motor Co.—Crouch motor cycle  
 Dunham, Geo. J.—Royal Tourist  
 Dingle, Wetherbee Co.—Crawford  
 Dragon Automobile Co.—Dragon  
 Dodge Motor Vehicle Co.—Pope-Toledo, Pope-Hartford, Pope-Tribune  
 Eaton, Chas. A.—Lambert  
 Fuller, Alvin T.—Packard, Cadillac  
 Fosdick, Harry, Co.—Thomas  
 Franklin Auto Co.—Franklin  
 Ford Motor Car Co.—Ford  
 Fredericks, W. A., Co.—American  
 Grout Bros. Auto Co.—Grout  
 Gearless Transmission Co.—Gearless  
 Hol-Tan Co.—Flat  
 Henshaw Motor Car Co.—Haynes  
 Harrison Wagon Co.—Harrison  
 Holmes Motor Vehicle Co.—Holmes  
 Hub Auto Exchange—Crest  
 Heyman, Edward—Heyman  
 Jenkins, W. M., & Co.—Mitchell  
 Jeffery, Thomas B., & Co.—Rambler  
 Kimball, E. T., Co.—Corbin  
 Knox Motor Truck Co.—Atlas  
 Lowe, George H., Co.—Aerocar  
 Locomobile Co. of America—Locomobile  
 Linscott Motor Co.—Wayne, National, Reo  
 Litchfield, Everett S.—Austin  
 Maguire, J. W., Co.—Pierce Great Arrow  
 Mills-Kennedy Co.—Welch, Springfield  
 Matheson Motor Car Co.—Matheson  
 Maxwell-Briscoe-Boston Co.—Maxwell  
 Morrison, A. E., Co.—Stearns, Oldsmobile  
 Morse, Alfred C.—Panhard  
 Metropolitan Auto. Co.—Moon  
 Napier Motor Co. of America—Napier  
 Northern Auto Agency—Pennsylvania, Pullman, Northern  
 Nichols, D. P., & Co.—Frayer-Miller  
 Prentiss Motor Car Co.—Studebaker  
 Park Square Auto Station—Berlet  
 Peerless Motor Car Co.—Peerless  
 Panhard & Levassor Auto Co.—Panhard  
 Parker, F. E., & Co.—Elmore  
 Puritan Motor Co.—Dolson, Mason  
 Reed-Underhill Co.—Knox  
 Randall, Frederick E.—Stevens-Duryea  
 Royal Automobile Co.—St. Louis  
 Reed-Underhill Co.—Knox truck  
 Reliance Motor Car Co. Agency—Reliance  
 Smith, Fred S.—Autocar  
 Stratton, H. C., & Co.—American Mercedes, De Luxe, Kisselkar  
 Squier, Geo. C.—Premier  
 Sturtevant Mill Co.—Sturtevant  
 Stranahan-Eldridge Co.—Buick  
 Skinner, K. A.—De Dion-Bouton, Brouhot  
 Shawmut Motor Co.—Shawmut  
 Sumner, B. D.—Commercial truck  
 Winton Motor Carriage Co.—Winton  
 Whiting, H. E., Automobile Co.—Mora  
 Whitney, C. F.—Stoddard-Dayton  
 Wing, Frank E.—Marmon  
 Waltham Mfg. Co.—Waltham-Orient

## MOTOR CAR ACCESSORIES

Auto Goods Co.  
 Atlas Mfg. Co.  
 Adwear Auto Tire Sleeve Co.  
 Acetyone Co.  
 Atwood Mfg. Co.  
 Auto Appliance Co.  
 American Metal Polish Co.  
 Aseptic Drinking Cup Co.  
 American Electric Novelty and Mfg. Co.  
 Angier Co.  
 Bowser, S. F., Co., Inc.  
 Bay State Hardware Co.  
 Boynton's Imp. Oil Clothing Co.  
 Boston Auto Gage Co.  
 Bullard, J. H.  
 Badger, E. B., & Sons Co.  
 Boyd, F. Shirley  
 Burmaster Rubber Co.  
 Baldwin Chain & Mfg. Co.  
 Bell, William G., Co.

Bemus, T. Alton, Co., Inc.  
 Bennison Co.  
 Broome, L. H.  
 Byrne-Kingston & Co.  
 Bova, L. E.  
 Bunker, Marcellus  
 Coates Clipper Mfg. Co.  
 Columbia Vehicle Tire Co.  
 Carr, F. S.  
 Coops, Charles W.  
 Chandler & Farquhar Co.  
 Consolidated Mfg. Co.  
 Connell, W. J.  
 Commonwealth Rubber Co.  
 Champion, Albert, Co.  
 Chesterton, A. W., & Co.  
 Conn. Telephone and Electric Co.  
 Colgan, J. W.  
 Dennett, George P.  
 Detroit Auto Supply Co.  
 Dyer, George F.  
 Downing, Charles J.  
 Dietz, R. E., Co.  
 Dover Stamping and Mfg. Co.  
 Dixon, Joseph, Crucible Co.  
 Dietzman Shock Absorber Co.  
 Dow Tire Co.  
 Dunn, D. W.  
 Elliott, Sterling  
 Ehret Tire and Tool Receptacle  
 Eastern Carbon Works  
 Electric Rubber Mfg. Co.  
 Eagle Oil and Supply Co.  
 Electric Storage Battery Co.  
 Ennis-Ruff Tire Co.  
 Fuller & Sullivan  
 Frye, T. C. & W. L., Co.  
 Goppelt, Frederick A.  
 Greenwood, A. N., Oil Co.  
 Gray & Davis  
 Gilbert Mfg. Co.  
 Gilbert & Barker Mfg. Co.  
 Gabriel Horn Mfg. Co.  
 Globe Optical Co.  
 Graygood Hydraulic Shock Absorber  
 Grady, J. W., & Co.  
 Hyatt Roller Bearing Co.  
 Hartford Suspension Co.  
 Hoeffcker Speed and Mile Register Co.  
 Heinze Electric Co.  
 Hicks Speed Indicator Co.  
 Healy Leather Tire Co.  
 Harris, A. W., Oil Co.  
 Hopewell Brothers  
 Hume Carriage Co.  
 Hudson Mfg. Co.  
 Jordan Marsh Co.  
 Jones Speedometer Co.  
 Jacobs Mfg. Co.  
 Jones, W. Herbert  
 Kilgore Air Cushion Co.  
 Kimball, E. T., Co.  
 Kempster Anti Friction Roller Bearing Co.  
 Long & Mann Co.  
 Leather Tire Goods Co.  
 Liscombe, Lucia E.  
 Lloyd, A. J., & Co.  
 Lea Speedistimeter Co.  
 Loring Speed Gauge  
 Luce, Chas. T., Co.  
 Lowney & Co.  
 Moore-Smith Co.  
 Mutty, L. J., Co.  
 Murray, P. A.  
 Miller, Charles E.  
 Mason, John A.  
 Monitor Electric Speed Recorder Co.  
 Massachusetts Auto Co.  
 New England Auto Equipping Co.  
 National Carbon Co.  
 No-Match Electric Burner  
 New England Lighting Co.  
 National Battery Co.  
 O'Brien & Russell  
 Old Colony Light Co.  
 Pantasote Co.  
 Parry, A. N., & Co.  
 Providence Spark Coil Co.  
 Pond, Robert L., Jr.  
 Prest-O-Lite Co.  
 Post & Lester Co.  
 Punctureproof Tire Co.  
 Pittsfield Spark Coil Co.  
 Presto detachable rim  
 Penn Petroleum Co.  
 Pennsylvania Rubber Co.  
 Proctor, G. H., Supply Co.  
 Rands Mfg. Co.  
 Rose Mfg. Co.  
 Rubay, Leon  
 Robinson, William C., & Son Co.  
 Russell, T. F.  
 Randall-Faichney Co.  
 Springfield Portable Construction Co.  
 Standard Battery Connection Co.  
 Sherwin-Williams Co.  
 Stevenson, C. H.  
 Stackpole Battery Co.  
 Sage's Trunk Depot  
 Stanley, John T.

Spiltdorf, C. F.  
 Speare, Frank P.  
 Speare's Auto Oil  
 Smith, R. H., Mfg. Co.  
 Stewart, Hugh, Co.  
 Teel Mfg. Co.  
 Trident Tire Co.  
 Uncas Specialty Co.  
 Underhay Oil Co.  
 Vacuum Oil Co.  
 Voorhees Rubber Mfg. Co.  
 Worcester Pressed Steel Co.  
 Warner Instrument Co.  
 Whitney, C. F.  
 Wilkinson, A. J., & Co.  
 Whitney Mfg. Co.  
 Winchester Speedometer Co.  
 Wadsworth-Howland Co.  
 Winthrop Moving Picture Co.

## BOATS, ENGINES AND ACCESSORIES

American Gas Moto Co.  
 Atlantic Co.  
 Buffalo Gasoline Motor Co.  
 Boynton's Imp. Oil Clothing Co.  
 Brownell-Trebert Co.  
 Bridgeport Motor Co.  
 Broadhead, W. H., & Co.  
 Bath Marine Construction Co.  
 Briggs & Wade  
 Binney, Arthur  
 Cramp, William and Sons Co.  
 Chandler & Farquhar Co.  
 Cutter, Wood & Stevens Co.  
 Chase Motor Co.  
 Cooley Mfg. Co.  
 Detroit Engine Works  
 Detroit Boat Co.  
 Davis, F. E.  
 Emerson, Joseph B.  
 Emmons, E. Gerry, Corp.  
 Electro Radiation Co.  
 Emery, V. J.  
 Essex Engine Co.  
 Fay & Bowen Engine Co.  
 Forbes, Walter J.  
 Ferro Machine and Foundry Co.  
 Gray Motor Co.  
 Guilford, Geo. A.  
 Hanna Machinery Co.  
 Holmes Motor Co.  
 Hodgson, E. S.  
 Harvard Marine and Auto Co.  
 Hurd, A. W.  
 Ideal Gas Engine Co.  
 Jager, Charles J., Co.  
 Lamb Boat and Engine Co.  
 Metropolitan Canoe Co.  
 Morse, A. S., Co.  
 Michigan Steel Boat Co.  
 Moore, C. Frank  
 Murray & Tregurtha Co.  
 Michigan Wheel Co.  
 McClellan, Charles P.  
 Norfolk Motor Co.  
 Norton Co.  
 Poyen, John S.  
 Progressive Mfg. Co.  
 Poole & Price Machine Co.  
 Palmer Brothers  
 Plug Umbrella Co.  
 Perkins Launch and Motor Co.  
 Racine Boat Mfg. Co.  
 Richardson Engineering Co.  
 Rathburn-Lacy Co.  
 Stamford Motor Co.  
 Stuart-Howland Co.  
 Stanley Co.  
 Small Brothers  
 Sterling Engine Co.  
 Sterling Mfg. Co.  
 Standard Engine Co.  
 Stuart, John, Co.  
 Termatt & Monahan Engine Co.  
 Terry, George H., Co.  
 Tuttle, D. M., Co.  
 Truscott Boat Mfg. Co.  
 Wells, A. E., & Son  
 Western Launch and Engine Works

## STEAM CARS

Boston Auto Livery—Ambulance  
 Clark, Edward S.—Clark  
 Ross, Louis S.—Ross  
 Stanley Motor Carriage Co.—Stanley  
 White Co.—White

## ELECTRIC CARS

Babcock Electric Carriage Co.—Babcock  
 Bailey, S. R., & Co., Inc.—Bailey  
 Columbia Motor Vehicle Co.—Columbia  
 Fosdick, Harry, Co.—Paker  
 Henshaw Motor Car Co.—Columbus  
 Prentiss Motor Car & Supply Co.—Studebaker  
 Rausch & Lang Carriage Co.—Rausch-Lang  
 Sumner, B. D.—Commercial trucks  
 Concord Motor Car Co.—Boston



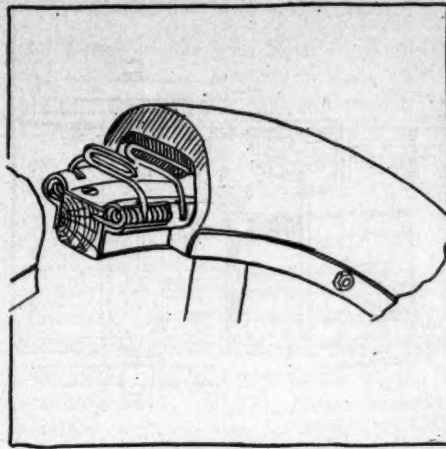
piece being stationary and the brushes carried on the revolving portion of the machine.

Another interesting car, is the Sturtevant, which is manufactured by the Sturtevant Mill Co., of Boston. This has been on the market for 2 or 3 years and therefore is not entirely a novelty. The main feature of its construction is the use of an automatic centrifugal clutch which automatically changes gear as the engine slows down or speeds up. To illustrate, let us say that the centrifugal clutch is arranged to engage the first speed at 400 revolutions per minute of the motor, the second at 600 revolutions per minute and the third at 700 revolutions per minute. It will be seen that the car can then be handled entirely on the throttle, no attention being paid to gear changing. However, this system has heretofore had one great disadvantage and that was that one could not accelerate the motor on a low speed as in hill-climbing. But this year a clutch pedal has been added so the clutch can be held more or less out of engagement. The clutch, with the gear box, is in reality a series of three clutches combined with a three-speed gear box; in fact, it is an individual clutch system of transmission. Roller clutches are arranged so that when one speed overruns another there will be perfect freedom of movement. Shaft drive is employed and the workmanship and material are strictly high grade. The motor and transmission are mounted together as one unit and ball bearings are employed on the crank shaft.

#### CARS OF EASTERN MAKES

The Springfield car, exhibited by Mills-Kennedy Co., presents a number of fairly unique features and at the same time is on sound standard lines. The motor is of 4½-inch bore by 5-inch stroke and is rated at about 35 horsepower. The transmission is of the selective type, giving three speeds and reverse, but the arrangement of the gear shift lever is unique, the lever moving forward and back in a single slot. Ordinarily this will engage either the second or third speed. To use the reverse and first a button on top of the lever is pressed. This disengages the hand lever from the short stub lever below the slotted quadrant and at the same time engages it with the short lever operating the reverse and first speed. There also is an interlocking device provided between the clutch and the gear shift lever to prevent shifting gears while the clutch is engaged and also preventing the engagement of the clutch until the gears properly are in mesh. The car is shaft-driven, the rear axle being of the full floating type with Timken roller bearings.

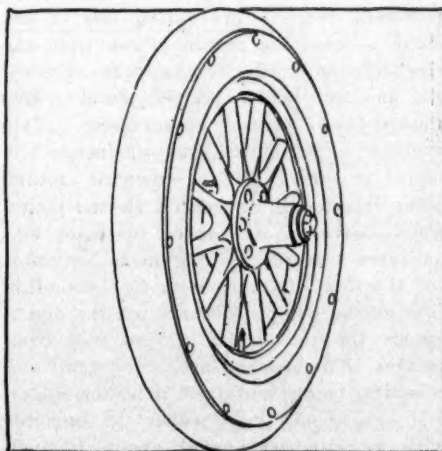
The Hub Automobile Exchange, of Dorchester, exhibits the Crest runabout, which is of its own manufacture. It is a small air-cooled single-cylinder shaft-driven car. Edward S. Clark, of Dorchester, showed the Clark steam car, which



BUTLER SPRING TIRE

embraced quite a number of novel features. It is a shaft-driven car, the engine and boiler being both placed under a hood in front, transmission being used which gives two speeds and a reverse. The reason given for the use of the reverse gear is that as a gearbox is necessary anyway it is much simpler to employ a reverse gear than reverse the engine. The engine is a compound high-pressure 3½-inch cylinder. Low pressure is 7 inches diameter and the stroke is 5 inches. Poppet valves are used on both the high and low-pressure cylinders for admission and exhaust. A lever is provided which converts the engine from simple to compound, then sets the cut-off. A condenser and vacuum pump are employed. The boiler, which is of the flash type, is located in front of the engine. Both fuel and water feed are by pumps driven off the engine, the stroke of which can be varied by a wheel underneath the steering wheel, the ratio of fuel to water being normally kept constant. The fuel supply is further regulated by a pressure diaphragm.

Undoubtedly the car that departs most from the regular standard practice is the Heyman. Both the motor and transmission gear are unique. To begin with, the motor has five cylinders arranged in a circle around the crank shaft with their axes parallel to that of the crank shaft. The motor pistons act on a disk whose



MITCHELL TIRE ON RIM

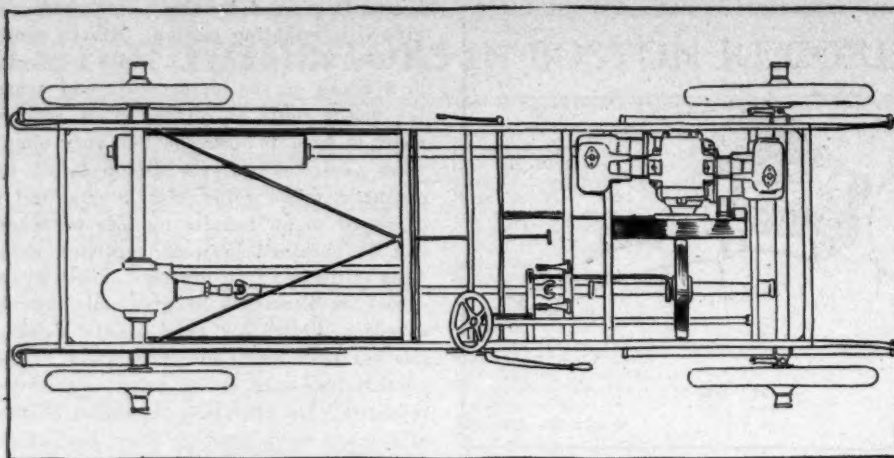
center is pierced by the motor shaft and give it a wobbling motion. At the center of this disk is a long pin which is pivoted in a crank on the motor shaft and causes the motor shaft to rotate. This arrangement is hard to describe but very simple when seen. The transmission is of the eccentric triple roller clutch type and is arranged so an infinite number of speeds can be obtained between zero and maximum if desired. In practice, however, the device is arranged to give only twenty speeds. While this type of transmission has not been heard of much lately, it frequently was used in the early days of the industry. Its operation is similar to that of ratchet feeds used on some mechanical oilers, variation of speed or feed being obtained by varying the throw of the ratchet arm. In the Heyman device three ratchet arms are used as this gives approximately uniform speed.

As usual, a prominent feature of the Boston show is the display of steam cars. Since Newton, a suburb of Boston, may be said to be the birthplace of the light American steam car, this might be expected and naturally the exhibit of the Stanleys, the originators of this type of machine, is quite prominent. Their machines, with the exception of the racing cars that appear at Ormond, are seen only occasionally outside of the New England states, where the demand almost equals the limited supply. This year eight different models are shown, ranging from the so-called gentlemen's roadster to a limousine town car. A peculiar feature of these cars is the use of hickory reach rods. The boiler, which is of the fire tube type, is placed under a hood in front. The engine, which is ball-bearing throughout, now is placed in a horizontal position in front of the rear axle which it drives through the medium of spur gears, a single reduction being used. The engine and differential are completely enclosed in a copper casing that protects them from mud and dust. All models now constructed are of the wheel steering pattern. The throttle is placed just below the steering wheel. The fuel feed is regulated by steam pressure and the water supply by means of a by-pass and hand regulation. A float indicator is now substituted in place of the gauge glass.

The Ross steam car, also manufactured in Newton, is an outgrowth of the Stanley idea. The general lines of this car resemble that of a gasoline touring car, both the boiler and engine being in front under a hood and the drive being by shaft to a live rear axle. This car has a large boiler and an independent steam feed pump.

#### ELECTRIC CARRIAGES

S. R. Bailey & Co., of Amesbury, Mass., who for many years have been widely and favorably known as manufacturers of horse-drawn wagons, exhibit an electric carriage of the victoria type which has a good many novel features. The motor



CHASSIS OF THE HOLMES FRICTION-DRIVE CAR

equipment is furnished by the General Electric Co., and the battery equipment is the Gould, of which thirty cells are used, giving 60 volts. Two notable features of this car are the interlocking of the controller and brake so that putting on the brake turns off the power, and another is an arrangement whereby the safety plug cannot be inserted in its socket unless the controller is in neutral position.

Two other local makers were to exhibit electrics, but up to the time of writing they had not arrived. These were the Concord Motor Car Co. and the Rausch-Lang Co. No particulars are available as yet concerning these.

Most of the makers who exhibited at the previous shows are represented here and in addition some local makers and those who did not have their goods ready for the earlier shows also have exhibits.

#### BIG ACCESSORIES EXHIBIT

The accessory men have no fault to find as to getting a chance to display their goods. There are scores of them here. Still, in going about among them one does not see anything that is startlingly new. One new thing that was to be put on has been late in arriving. It is a spring for cars. It is called the Mercer roller bearing spring and was recently turned over to the Jones Speedometer Co. The men who have looked it over think very well

of it. It has been tested out on a Pierce Arrow and a Locomobile with much success. The idea is simple—in fact, its simplicity is what makes it valuable. The rollers go between the leaves of the spring about an inch and a half apart. They are so imbedded that when the car jounces up and down the leaves roll forward and back with an easy motion, taking away the shock.

All the tire companies are represented. There is the Morgan & Wright, Diamond, Goodrich, International, Bailey, Dow, Michelin, Dunlop, and all the rest. Gray & Davis have a splendid supply of lamps. So has the Neverout Lamp Co. Other lamps equally well known have their spaces. A walk through the accessory section is a replica of Madison Square garden and the Chicago show. The tool men, oil companies, tops, speedometers and autometers, batteries, spark plugs, magnetos, shock absorbers—in fact, everything that one can imagine as going with a car—is on hand. To enumerate them all would be reproducing the pages of Motor Age for weeks back.

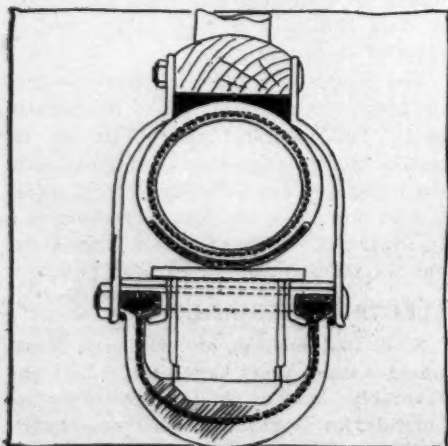
The Defiance Chain Co. shows a new non-skid, the tread chains of which are casehardened. The side retaining pieces are formed of wire cable, the ends of which are united by snap hooks. At intervals cross members extend across the felloe of the wheel and unite the side members, thereby preventing loss of the chain in case the car is driven with the tire deflated. The device looks substantial and well made. At this stand is also shown the Lombard speedometer. This operates on an entirely new principle. A liquid is forced by an eccentric rotary pump into a cylinder with a slotted piston which moves as the speed increases and uncovers a larger opening in the cylinder for the flow of liquid back to the suction side of the pump. The rise of the piston causes the movement of the indicating pointer. The mechanism is very small and compact, being contained in a hemispherical cup about three inches in diameter with a cylindrical cover about  $\frac{1}{2}$  inch high. The pump employed is rotated by

a flexible shaft from the front wheel. The Baldwin Chain and Mfg. Co. shows a number of interesting sundries. Among these is the Baldwin spring recoil check. This is of the friction type and is so arranged as to allow of a small amount of play of the springs before the check device comes into action. The friction is obtained by means of the action of two halves of a piston fitted with cork friction surfaces against the sides of a cylinder. The halves of this piston are forced out against the cylinder walls by a toggle joint which is acted upon by an eye bolt to which a chain is attached surrounding the axle.

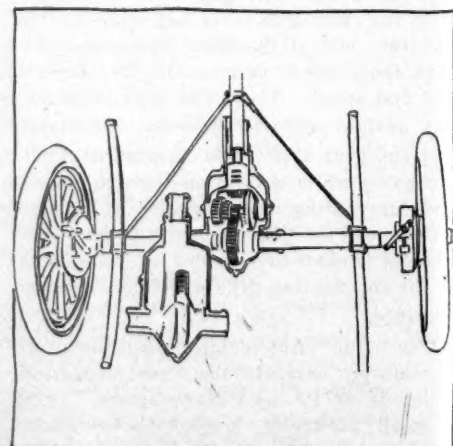
A novelty in the way of a detachable rim is shown by the Presto Detachable Rim Co., of Jersey City, N. J. The rim is held in place by a series of eight square lugs on the base which engage with eight bayonet joint grooves on the wheel rim. These were so placed that the longitudinal slots point to the rear when the wheel is in motion so that there will be no tendency of the rim to come off under driving stresses. Two diametrically opposite radial spring bolts which engage with holes in the tire rim keep the wheel from coming off when the car was being backed. The claim made for this rim is extreme rapidity of manipulation and also that no tools are required for its removal and replacement.

#### NOVELTIES IN TIRES

There are two rather interesting novelties in tires. The Mitchell punctureless tire consists of an annular steel chamber fastened to the felloe of the wheel and enclosing a pneumatic tube similar to an old singe tube tire. Resting on the outside of this tube is a metal ring of rectangular section which abuts against the outer shoe of the tire. The other device is the Butler spring tire exhibited by the Massachusetts Automobile Co. This consists of a large number of peculiarly shaped torsion springs arranged on either side of the felloe and surrounding a fiber ring of about  $\frac{1}{4}$  inch thickness and 1 inch width. These springs tend to force this ring outwardly. Above the springs and ring and surrounding them is another and wider

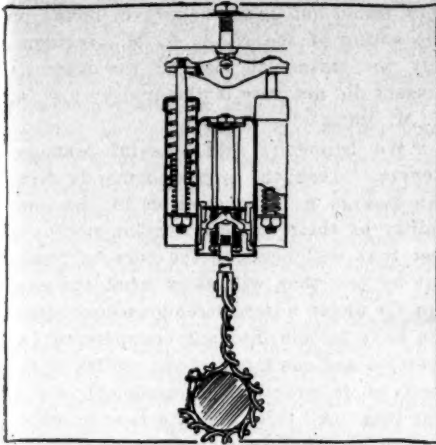


MITCHELL PUNCTURELESS PNEUMATIC TIRE



TRANSMISSION ON CAMERON CAR





BALDWIN'S NEW RECOIL CHECK

ring or strip of leather. Resting upon this and enclosing the whole arrangement is a form of outer shoe. The tire does not differ materially in appearance from an ordinary pneumatic tire.

The only motor cycle exhibited at this show is the Crouch, made by the Crouch Mfg. Co., of Stoneham, Mass. This machine has a motor of about 3 horsepower and drive is by a 1½-inch flat belt. Proper belt tension is maintained by a ball-bearing idler which is adjusted by means of a neat and simple hook device. Double grip control is employed, the left grip controlling the ignition circuit and the right grip the throttle. The spark is advanced by a lever on the top tube which also acts on the exhaust valve lifter. The motor is hung well down but at the same time has ample ground clearance. The wheelbase is 53 inches.

#### COMMERCIAL CARS SHOWN

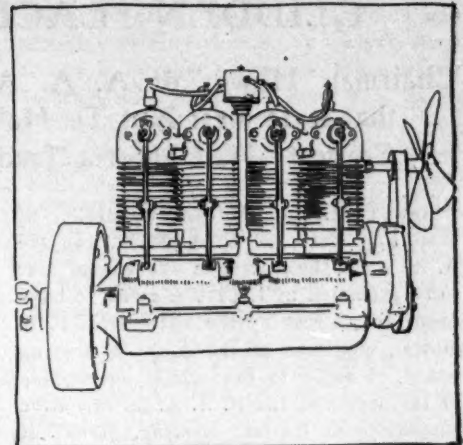
The commercial cars have Horiticultural hall practically to themselves. The place is just large enough to comfortably house the vehicles there. The Rapid trucks are represented by four different wagons. There is a light delivery wagon, a passenger bus for a dozen people and one of the big passenger vans used for sight-seeing. There is also a light truck that will carry about a ton. Quite a number of these latter are in use in Boston. The Logan trucks are also there. Mr. Blake has a couple of light delivery wagons, a 1-ton truck and a heavier one capable of carrying a greater weight. The Knox company, of Springfield, has its complete line of vans and wagons, there being four in all. From the same city comes the Atlas truck. The truck is a powerful one and those used in demonstrating here have been successful. The Commercial Truck Co. is represented with an exhibit comprising light and heavy cars to the number of four, and they make a favorable showing with the others. B. D. Summer is a new exhibitor at the show and he presents a truck the models of which, two in number, are quite powerful.

The power boat section is well worthy of anyone's attention. There are some of

the finest models ever seen anywhere in the basement of Mechanic's hall. There are at least six boats that are close to the 40-foot mark. There are several of 30 feet and dozens of boats under that length. The Atlantic company has about a dozen models, mostly dories, that make a splendid showing. John Stewart, of Wollaston, has a staunch looking craft about 30 feet that has beautiful lines. George Guilliford, of Lynn, has another that seems as broad as it is long and it has a very good depth, there being plenty of standing room. It is built for rough weather in all seasons. Another attractive model is one built by the Bath Marine Co. that has a sheer to its cabin that makes it resemble a whaleback. It draws quite a bit of water. The Fairbanks company has two boats of about 30 feet. One in particular, finished in cedar and mahogany, stands out prominently as an excellent example of the boatbuilders' art. There is racing model by the Ronomor company that seems like an eel.

There are engines by the hundreds in the hall. From the little ½ horsepower they range up to the big Standard of 300 horsepower. The little tenders, with their miniature engines, make a pretty contrast to the other boats, for as one passes through the exhibition the gradual sizes seem to grow on one as they skip from tenders to canoes, then to dories, next launches and later the bigger and larger boats that are good for heavy weather.

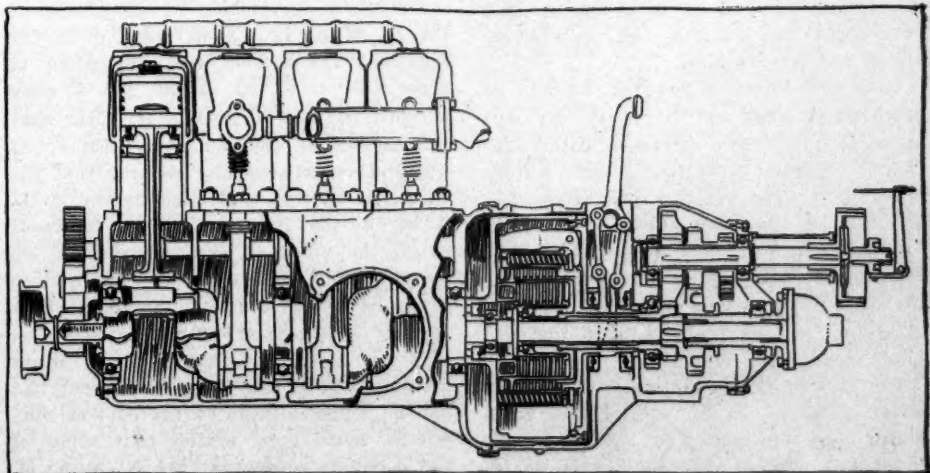
The Crescent Parts Co., New York, shows the Crescent removable rim which formerly was known as the Harburg rim. The Auto Goods Co. has the Cinch tire repair kit, this outfit consisting of a number of so-called seals which are disks united by a short stem. One of the disks is forced through the puncture, then both disks are forced together by means of a special pair of pinchers. The seals resemble in general appearance a collar button and are rubber-coated where they come in contact with the inner tube, thus helping to form a tight joint. The kit consists of a number of seals, a cutter to enlarge the hole if necessary in which to insert the



CAMERON FOUR-CYLINDER MOTOR

seal; a tool to stretch the hole in which the seal is inserted and the pinchers for tightening the seal in place.

Stewart, Howland & Co., of Boston, have a novelty in the way of an electric horn, or rather an electric horn attachment. It is known as the Trece Multiphone horn and may be applied to any horn which uses a flexible tube and bulb by simply removing the bulb and reed and connecting the device to the end of the flexible tube. A series of four vibrators are employed which are contained in a polished wood box which can be located on the dash and which is about the size of a square Eisemann magneto coil box. Power of course can be obtained from the ignition batteries. At any time the horn tube can be removed from the device, the reed reinserted in the horn and the bulb again used. On account of four vibrators being used a compound tone is produced which is susceptible of great variation. The Standard Carburetor Co., of Providence, R. I., shows the Standard carburetor, which is of the float feed type, the special features being a shutter which cuts off almost the entire air supply so as to give a rich mixture for starting. It has a needle valve adjustment of the gasoline jet and is of the throttle-compensated type, being without automatic suction-operated air valves in any part of it.



SECTIONAL VIEW OF THE STURTEVANT MOTOR AND TRANSMISSION

## GLIDDEN PEACE NOW POSSIBLE

### Chairman Hower of A. A. A. Believes with N. A. A. M. that It Is Best Not To Make Annual Tour an Eliminating Contest—Will Meet a Trade Committee

New York, March 11—All possibility of a split between the N. A. A. M. and the A. A. A. in the matter of the annual tour to be promoted by the latter seems to have been laid at rest by the letter from F. B. Hower, chairman of the A. A. A. touring board, in reply to the official notification of the action of the N. A. A. M. executive committee at its last meeting, given out by General Manager Miles on Saturday. There now seems but little doubt that the national trade and sport committees will be able to get together and by mutual concessions reach an agreement on rules that will be satisfactory to both. Mr. Hower's letter follows:

Gentlemen:—As chairman of the touring board of the A. A. A., I beg to acknowledge receipt of copy of the resolution adopted by your honorable body under date of March 6. We believe with you that it is not best to have an eliminating contest, but rather to give the contestants a reasonably severe run over the average American roads, and award the trophy to the club having the largest number of survivors as compared with the original number of starters. This seems to be in line with your ideas. By the result of a run of this kind our members and motor car users at large will be able to determine for themselves the relative merit of the cars as applied to their own particular requirements.

We feel a little reluctant to promulgate rules for this tour without your cooperation, and therefore suggest that your president appoint a committee of three from your association to meet a like committee from our board to formulate mutually satisfactory conditions. Inasmuch as we are expected to make an immediate report, we would ask that if this meets with your approval, you take prompt action.

The N. A. A. M.'s demand, though, for an out-and-out pleasure tour embraced a suggestion that there be included a team contest for a club trophy to be awarded the team showing the largest proportion of perfect scores, teams to be of not less than ten members. The perfect score was to be based solely on a car's finishing each night control within a reasonable time. On the other hand the idea of the A. A. A. touring board was admittedly for a far more strenuous test, which should embrace not only an abnormal daily run but restrictions as well as to access to cars over night and penalizations for replacements and repairs also.

It is now believed, however, by way of compromise, that the N. A. A. M. will agree to a bit more strenuous determination of a perfect score than a car's merely finishing at night within a reasonable time, and that on the other hand the A. A. A. touring board will consent to cutting out replacement penalization and not making the daily runs so long as to rob the tour altogether of the features of a pleasure jaunt through the country.

Previous to the receipt of Mr. Hower's letter a N. A. A. M. official said to a Motor Age representative: "We do not favor any contest that shall have as its object the elimination of contestants until

but one survivor remains. To be frank, what the majority really desires is an out-and-out pleasure tour with amateur and not professional drivers, wherein there can be no call upon the makers for factory pilots and wherein company officials and others can take part for pure pleasure, being permitted by the distance scheduled to take time for meals and side trips at will so long as their cars arrive at their destination reasonably early at night. If there is to be a test our contest committee has worked long and hard on a set of rules for a test that will be a test indeed. These rules, however, were tabled pending the action of the A. A. A."

Before Mr. Hower's letter was sent a touring board official in a talk with the Motor Age correspondent remarked: "I think it is up to the A. A. A. to give the public a tour that shall be enough of a test to enable us to recommend to the public at its outcome the cars that survive with perfect scores as eminently reliable and worthy of purchase. To say that a 'perfect score' car that has been overhauled over night or has had a new axle put in is the equal of a car that has reached all controls on time without repairs or replacement is nonsense."

The contents and tone of Mr. Hower's letter would seem to indicate that in the intervening time the N. A. A. M. and A. A. A. people must have had a little and perhaps more than one little friendly heart-to-heart talk.

Chairman Hower has called a meeting of the touring board executive committee at Buffalo next Thursday. There seems to be a chance in view of the necessity for having the matter settled without delay that President Pope will at once name a conference committee of three as requested in Mr. Hower's letter without waiting until the April meeting of the N. A. A. M.

On the announcement of the action of the N. A. A. M. a howl went up to the high heavens against the proposition to make the A. A. A. annual run a mere pleasure tour. Foremost in criticism were the leaders of the American Motor Car Association, who openly declared that the N. A. A. M. was controlled by the A. L. A. M. and that its action did not represent at all the views of the independents on its roll. They announced that they were in favor of a test tour and would heartily support any contest of a test character that the A. A. A. or the A. C. A. might promote. They said their contingent had had no representation on the contest committee, more than hinted that some of the members present at the N. A. A. M. meeting had not voted, and declared that

they would not deem themselves bound by the action of the N. A. A. M. Incidentally the statement that all the members present did not vote is disputed by a N. A. A. M. official.

"We believe," said General Manager Reeves, "that the public demands from the makers a demonstration of the reliability of their cars for touring not by a test that will hammer the cars to pieces but by one that will show what the cars can do under a few strenuous conditions. We have circularized our members on the question and the tenor of the replies so far received is practically unanimous for a test tour. All this talk of a tour in which a prize is offered being made a pure pleasure tour is arrant nonsense. It can never be. Mark my word, there will be a tour and it will be a test tour, too. I firmly believe that those A. L. A. M. makers who have participated and been successful in past tours will demand a test run and patronize anyhow any tour the A. A. A. will promote, be it along pleasure or test lines."

The suggestion contained in Motor Age's New York letter last week that each day's run be divided into a noon and a night control, and that a car be penalized a point for each minute late at either on a schedule based on legal speed limits is meeting with much favor as a reasonable compromise between the extremes of a free-and-easy, go-as-you-please pleasure tour and an out-and-out test.

In the hubbub of the recent discussion of the pleasure vs. test tour question the problem of route has been temporarily neglected. New Yorkers favor New York as the terminus, but acknowledge that the wishes of the makers in the event of their supporting the tour must be seriously considered. A very prevalent and popular suggestion here is that the tour, while ending in New York, shall embrace a visit of several days in Chicago. Under this suggestion the route proposed calls for a start from Boston and a return from Chicago by way of the national highway, Pittsburg and Philadelphia.

Boston, Mass., March 12—It is learned here on reliable authority that President Pope, of the N. A. A. M., has decided to accede to a request of the A. A. A. touring board and appoint a special conference committee of three to discuss rules for the annual tour and that it will meet the A. A. A. touring board conference committee in New York on Monday next.

#### CHANCES IN INDIANA

Indianapolis, Ind., March 12—It is believed that Indiana is in a fair way to become one of the greatest motor car manufacturing centers in the United States. There is not a city of any importance in the state that is not trying to get a motor factory of some kind or other. From reports gathered from com-



mercial clubs all over the state it is stated that at the present time no less than \$2,450,000 is available for bonuses and free factory sites. At the present time two companies are negotiating for a location at Columbus. The desired location is that until recently occupied by the bankrupt Janney Mfg. Co., and the companies said to want it are the Dragon Automobile Co. of Philadelphia and the Cameron Car Co. of Brockton, Mass. H. R. Averill of the Cameron company and Henry Rawle of the Dragon company have thoroughly inspected the factory buildings and reported favorably on them to their respective companies. The Commercial Club of Linton also states that one of the largest motor companies in the east is negotiating for a site, asking nothing more than free ground upon which to build. This company, it is understood, manufactures a line of cars selling from \$850 to \$6,000 and employs about 500 men. As Linton is in the heart of the soft coal fields it is said to be a desirable location for manufacturing purposes.

#### ROLLS FAILS TO ANSWER

Buffalo, N. Y., March 12—Yesterday marked the expiration of the time during which the challenge for a reliability run from New York to Chicago and return, issued by E. R. Thomas to C. S. Rolls. Recently Mr. Rolls visited the United States and on his return to England made an address before a number of the manufacturers of that country in which his remarks on the high-grade cars made in the United States were reported to have been rather caustic. Mr. Thomas replied by issuing a challenge for a stock car reliability contest between a Thomas Flyer and a Rolls-Royce, the only conditions being that it be under charge of a committee to be appointed by Judge W. W. Hotchkiss, president of the A. A. A., and that it be run within 30 days, the last of which passed yesterday, in order that the roads would be in their worst possible condition. In the letter accompanying the challenge Mr. Thomas proposed to insure against specially prepared cars being entered by allowing the committee to choose any car, Thomas Flyer or Rolls-Royce, in the country, the manufacturer to reimburse the owner.

#### CUTLER RELIEVES DAY

New York, March 13—Special telegram—At the conclusion today of a 2-day session of the executive committee of the Association of Licensed Automobile Manufacturers it was officially announced that, owing to the continued illness and absence of George H. Day, E. H. Cutler had been given charge of the association as chairman of the executive committee and enters upon his duties at once. President Clifton said the appointment is but temporary, pending the return of Mr. Day, who is spending the winter in Florida and may remain several months.

## EARLY SHOWS FOR ALL

### A. L. A. M., Chicago and the A. C. A. Exhibitions in October, November and December

New York, March 13—Special telegram—The A. L. A. M. will hold its next annual show in Madison Square garden early in November at some date preceding the opening of the horse show on November 18. The Motor Age's New York correspondent is able to state this positively and on authority from an official source. Negotiations are in progress with the Madison Square garden management for the allotment of the exact date. It is inferred that the meeting of the executive committee of the association, in progress today, has to do with a general discussion of this topic.

Though the Seldenites are confident they can accomplish the necessary shifting of the Madison Square garden dates so their show may be held early in November, negotiations have not yet been concluded to that end. The stumbling block in the way is the business show dated for the beginning of November. Neither the horse show nor the horse sale forerunning it will give way nor will the bicycle race, which is dated for December 8. Negotiations are difficult and delayed by reason of the promoters of the business show, Cochrane & Payne, having their headquarters in Chicago. Should the business show decline to give way then the licensed show will have to be held at its usual time, the third week in January. In that event the independents probably will have their show in November, but the Chicago show surely will be held in December. The executive committee is in session today, but there is small chance of its completing the show negotiations today or for that matter for a week or more.

Informed of this determination of the Seldenites, General Manager Mills, of the N. A. A. M., said: "That will mean that the Chicago show will be held November 30 to December 7, providing the Coliseum engagements will give us the week preceding to decorate the building and put it in shape to receive the exhibits. On the strength of the wishes of the Chicago Automobile Trade Association, as expressed at my conference with it, I secured the refusal of the Coliseum from December 1 to 15."

Pending the decision of the A. L. A. M. as to the date of the Madison Square show, it is pretty well understood that the Automobile Club of America and the American Motor Car Manufacturers' Association have had in mind all along the antedating of the A. L. A. M. show, with theirs at the Grand Central palace. Should the date chosen for the Madison Square garden show be the first week in November, then the club and independents would be forced back into October. That they

might not be wise to this may be inferred from several utterances of members and officials favoring running as early a show as one in October. The discussion of the question came up at last week's A. L. A. M. meeting during the presentation of the report on the previous show, which financially is not yet quite complete. Then came, naturally, a discussion as to the desirable date of the next show, which resulted in a decision in favor of November and the beginning of the negotiations with the garden company.

#### HARVEST BEING REAPED

Minneapolis, Minn., March 11—Business from the Minneapolis show is piling up in a most satisfactory way. The show ended Saturday night with all flags flying, and with one of the record crowds of the week. Dealers who were enthusiastic on the closing night have reason to be more so at the opening of the after-week. The sales on the floor of the armory reached a considerable amount, but they were not city sales. The visitors from the towns throughout the northwest bought liberally, and in some instances sales of individual dealers ran above the \$20,000 mark. To city buyers, however, the affair was more of a show than of a trading place. During the Monday following the show, local dealers have closed sales amounting to thousands of dollars. It is the aftermath which will make the show a most valuable feature of the spring trade. Orders will be closed up in great numbers during the next few weeks, and it is evident that the show has settled the minds of hundreds of prospective purchasers. The attendance at the exhibition for the week was entirely satisfactory, and it is evident that future shows will demand more room than the new armory affords. The exhibits were maintained complete until the close of the week, and the programs of features and music were better each night.

#### OMAHA'S 3-DAY SHOW

Omaha, Neb., March 13—Special telegram—Although only half a dozen dealers are in the affair, the second annual show which opened tonight in the Auditorium looks to be a winner. Nineteen different makes of motor cars are represented and one of the exhibitors is from out of town—from Lincoln. One of the concerns has motor boats and another one motor cycles. The show will last 3 days and will be open afternoons and evenings. Those occupying spaces are: Powell Automobile Co., with the Cadillac, Pope-Toledo, Franklin and Baker electric; H. E. Frederickson, Thomas, Peerless, Buick and Woods electric; Rambler Automobile Co., Rambler Deright Automobile Co., Stoddard-Dayton, Premier, Ford, Reo, Mason, Pope-Waverley electrics and Outing motor boats; R. R. Kimball, Stevens-Duryea, Stanley steamer and Babcock electric; Lank & Compton, Maxwell; Lincoln Automobile Co., of Lincoln, Neb., Winton; L. Flescher, cycles.



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## FRANCE IS ALARMED



LL FRANCE, so far as the motor car world is concerned, shows actual alarm over the gold cup tour of the continent, or, as it may strictly be termed, the American invasion. The French papers and the French makers are not so slow as to believe that the gold cup tour is a tour—they believe it is a commercial attack and so fearful of the results are they that they are openly advocating that the government should prevent the tourists from landing on French soil. However little as an advertising stunt this proposed tour may have been, it was insignificant to what it will be after the almost spontaneous explosion of the trade and press. Today the French have spread all over the republic the fact that America has cars that can compete with those made at home, that these cars are to be on exhibition in running form, that they are to do something to dispel the French mind of the notion that only France can build motor cars, and that the French motor car industry is actually threatened. There has been a wail and a big wail over the proposed tour and in all probability there will be several more wails. France has been pretty hard hit within the past year, for, comparatively speaking, its British and American trade has fallen off to an alarming extent and the loss of business has become a source of worry to the country that has been the biggest exporter of cars since the inception of the industry. It is only a just reward that the French are receiving—they have so exasperatingly pooh-pooed anything American that it was only natural the American maker should strive to bring his wares up to such a high standard as not only to be able to compete with the goods made in France but to actually surpass them, for home use or for use anywhere on earth. The American maker may be thankful for these criticisms, unjust though they may have seemed at times, for they were responsible for the present high class of the American car, whose standard had to be raised in order to compete with the foreign productions. The French did not build good cars for the sake of educating the American maker; they built them to sell and to make reputations, but they did not reckon on the energy and the ingenuity of the Yankee and they are now reaping their reward. They have had no consideration for America and Americans beyond unloading their surplus and, having been treated decently and having been given a good market for many years, they now show the most ungracious spirit imagin-

able. In the meantime the American spirit of push will go on, to the chagrin and financial loss of the French maker, whether he likes it or not. Then the tables will be turned—they have been turning—and whereas France now finds a market in America for her cars, America will soon find a splendid market in France for her motor car product.

## ANOTHER NEW FUEL



BETWEEN denatured alcohol and alkoethine it is apparent the price of gasoline will not be materially raised once the new products have been placed on the market in such quantities as to make an unlimited supply available. The fuel question is one that has received most careful consideration by many designers and experimenters during the past few years, for the steady rise in the price of gasoline has indicated that there is to be no end to the advance, so that a new fuel for internal combustion motors had to be sought. Apparently this had been found in denatured alcohol, but that fuel has been and is still unavailable, owing to the limited supply and consequent excessive cost as compared with the present price of gasoline. Experiments have been going on with a mixture of acetylene and alcohol that are reported to have been remarkably successful in all ways and it is not among the impossibilities that something of the sort will be found on the market in open competition with gasoline, unless the system takes it into its head to buy the patents in order to protect its own interests, something it might be coaxed to do rather than to permit anybody else remaining in business. The manufacture of alkoethine has not yet been commenced—or, rather, the manufacture of the apparatus has not been commenced, for it is all in the apparatus used in making it.

## A WHOLESOME FIGHT



THE MAKERS of motor cars in this country have evidently come to realize the advantages of holding national shows much earlier than has been the custom—or else there is such rivalry for supremacy between the licensed and independent organizations that the show is made to stand the brunt of a contest. Be that as it may and disregarding whatever may be the intentions of the show managements, the trade at large will find itself profiting by a contest which appears to have been inaugurated by the controlling bodies. Whatever may have been the reasons for the little spat that has appeared, the early presence of the show

must be responsible for placing the trade generally in a better position from a commercial standpoint than it could hope to attain by holding shows as late in the season as has been customary. Earlier shows have been in demand for a number of years, but they have been frowned upon mainly because the makers have not been in position to prepare for them and as a result the selling and delivery of motor cars have been delayed, to the loss not only of the maker but the dealer and the user as well. With the big shows at the beginning of winter—or at the close of the previous selling season—they will become more and more trade affairs than they have seemed to be during the past three or four seasons. The local shows, held immediately prior to the opening of the selling season, will naturally take care of the retail end of the industry and be the means of enthusing the public.

## PRIVATE ROAD RACES



MOTOR AGE does not believe that road races which have not received the sanction of the authorities and the public should be permitted and has so expressed itself. Such affairs naturally tend to disturb the people and the authorities, resulting in motorphobia and a tendency on the part of municipal and state lawmakers to pass such severe measures for the government of the use of the highways as to make all motorists feel the burden that is placed upon them through no fault of theirs. The highways are not the places for such contests and even the promoters of the Vanderbilt cup race, permission for the running of which has always been cheerfully given, have realized that the time has arrived when the highways must remain for the people and not for the few. These contests happen frequently and nearly always leave trails of criticism and prejudice, yet they are of more or less interest to the motoring public, even if they are advertising stunts and are direct violations of state and municipal laws. If Motor Age is taken to task at any time for publishing the outcome of such affairs its defense is that it is legitimate news, that some classes of readers desire it; but it is nevertheless regrettable that these affairs should even be suggested, much less grasped with avidity by makers and dealers, whose welfare lies in fostering public favor rather than fostering antagonism. The day has not arrived when motor cars can be driven over the highways at racing speed without calling forth strong protests from people who have not been educated to the use of the motor car.





## CURRENT COMMENT



WHEN C. S. Rolls returned to England from a trip to this country he unburdened himself of a lot of impressions he gathered after he had seen the success of things American in the motor car field and which were too much to keep, chiefly because they were more or less painful. Mr. Rolls talked so much and apparently so seriously of all the English cars—and, between the lines, of his own car—that it brought out a challenge or two from American makers to hold a reliability run from New York to Chicago. A sufficient time was allowed to accept the challenge and to prepare for the event. So long as the time has expired and the challenge has not been accepted, the answer is too plain to need explaining. Probably Mr. Rolls will keep away from this country or will at least keep still in the future.

CONSTERNATION has seized the French makers and more particularly the French motor car papers since they have come to realize that the proposed gold cup tour of American cars through French provinces is an assured fact. They see in this a gigantic advertising stunt, that may be of wholesale benefit to American makers and disastrous to continental makers. Therefore they want the Americans prohibited from even landing on the shores of France, lest they make a too favorable impression on French motor car buyers—or possibly on French femininity. The fact that a Frenchman—Georges

Dupuy—is the father of the tour or invasion or whatever it may be termed, is by no means pleasing to trade interests abroad. All of this hubbub illustrates a weak point in the Frenchman—he cannot gracefully go into a game where the competition is strong; he prefers to be almost cock sure before he tackles a thing.

BOSTON'S motor car and motor boat show, which is now being held, is such a gigantic affair as to back up all that Motor Age has had to say about this being entitled to be called a national exhibition. Boston has not only the largest show in point of numbers of exhibitors, but in the number of square feet of floor space, and on top of all this, it must be remembered, her show can be credited with a good many things that were not at either of the New York shows or the one held in Chicago. As Motor Age said, Boston belongs in the national class if any of the shows do.

ALKOETHINE is a new fuel for internal combustion motors, made up of a combination of denatured alcohol and acetylene gas, or, more strictly speaking, alcohol and calcium carbide. Experiments have been going on for several weeks and the reports of the results are so gratifying as to be most encouraging to the users of motor cars, for in alkoethine appears to be a foe of gasoline and consequently of the Standard Oil Co., which has had its own way in the matter of prices for liquid fuel up to the present time. If the inventors of alkoethine desire to do the world a good turn and receive a blessing and financial reward, let them absolutely refuse to sell their patent to the system.

INDIANA is hot after the motor car industry and does not propose to let Michigan and Ohio lead it if money will do anything to put it at the top. That state is already one of the leaders in the motor car industrial field, but inasmuch as several chambers of commerce have something like an aggregate of \$2,000,000 as a bonus fund and are willing to part with this sum, it will be seen the Hoosier state does not propose to be the last in the race.

PEOPLE living in Hawaii seem to be a most congenial lot of human beings. Perhaps it is because of their restricted sphere and their lack of direct touch with the world at large. The motorists are of the same caliber—they are of the get-together sort. Each year there is a floral parade in Honolulu, in which the motor

car and the bicycle play most important parts and receive beautiful prizes. One of these affairs has just been held, and, like those of previous years, the motor car was the chief object in the procession, barring of course the beautiful women occupying the cars and going a long way toward making the success of the cars in the parade. Would that Hawaiian spirit were a part of motoring life in other parts of the United States.

MOTORISTS in some parts of the country seem to be up against it, whichever way they turn. Out in Des Moines, Ia., for instance, there are people living who object to the motor car and now the cemetery authorities object to cars being driven in the sacred grounds. The last wail does not necessarily come from the grave, but it is a certainty those who are doing the wailing are not live ones.

MOTOR AGE is in receipt of a treatise on "The Horse," a cleverly written, nicely-designed and splendidly-illustrated booklet—if Motor Age has not gone so far away from the equine as to have lost its capacity to properly judge what is good in horse-flesh literature. It may be a horse on Motor Age—the sending of this pamphlet—or it may be a hint of some sort—just what, Motor Age is not capable of determining. Anyhow, there is a good deal of horse sense in the booklet.

## THE WEEK IN BRIEF

Annual floral parade in Honolulu an elaborate affair, motor car section proving feature.

A. L. A. M., A. C. A. and Chicago shows to be earlier, dates in October and November having been decided on; hitch over getting garden when wanted.

Chairman Hower suggests N. A. A. M. appoint committee to confer with A. A. A. touring board relative to rules for Glidden tour; belief event will be for club trophy according to makers' ideas.

Boston's show proves to be largest of winter, having 342 exhibitors and 423 cars of 121 different makes on view, occupying 105,000 square feet of space.

Government experts, after experimenting with alcohol, declare any gasoline engine can use denatured product without being changed.

Forty-nine cars representing four nations are entered in Targa Florio, the Italian classic which is first big motor event of season.

American Automobile Association names legislative and good roads committees; early meetings of both bodies to be held.

Packard runabout makes fastest time in Pasadena hill-climb; Pope-Hartford shows most speed among touring cars.

French papers in an uproar over proposed American gold cup tour of Europe and cry out against invasion.

## COMING MOTOR EVENTS

March 18-23—Show at Providence, R. I., in Infantry hall.

March 20-27—Nice, automobile week.

March 21, 22, 23—Toledo show, to be held in Colliseum.

March 21-30—New Haven industrial exposition and motor car show, in state armory, New Haven, Conn.

April 2-15—Monaco meeting.

April 1-6—St. Louis Automobile Dealers' Association, show at St. Louis in Jai Alai building.

April 6-13—Montreal, Canada, second international motor car and sportsman's exhibition. R. M. Jaffray, manager, 309 West Notre Dame street.

April 8-13—Pittsburg Automobile Dealers' Association show at Pittsburg in Duquesne garden.

April 18-20—Targa Florio, in Sicily.

April 25-28—Touring competition, under auspices of the Automobile Club of Turin.

April 28—Chateau Thierry hill climb.

May 1-15—Paris-Madrid touring competition to Madrid exhibition.

May 18-21—Auto-Cycle Club of France, Paris-Ostend-Paris.

May 24-27—Automobile Club of Austria, voiturette contest.

May 15-31—Automobile Club of the North, industrial vehicle competition.

May 18-21—Milan touring competition.

## MOTOR CARS IN PARADE

### Elaborate Floral Function Is Held in Honolulu and Startling Are the Designs Exhibited

Honolulu, Hawaii Territory, Feb. 23—Motor cars were important factors in the annual floral parade yesterday, the first prize in class A going to C. M. Cooke, whose touring car was of an elaborate Chinese design, glittering in gold and silver tinsel, hung with lanterns and decked with clusters of peacock feathers, dragons and hangers. The occupants of the car were attired in Chinese garments. A Afong won the prize in class B with a car daintily decorated with cherry blossoms. In class C, for runabouts, George Denison startled the natives with a representation of a reeking volcano, from the fiery crater of which a devil peered. The car was completely covered with a canvas cone, painted and convoluted to represent the steep side of a mountain, down the sides of which a fiery trail of pahoehoe gleamed. Denison used sulphur for realistic effect which resulted in a scene he had not counted on, an eruption of Greek fire prematurely causing some excitement, particularly among the motorists who were inside the cone. The McCandless entry was completely banked with huge yellow chrysanthemums and the wheels wound with yellow cloth of a corresponding shade. The young women in the car wore white dress and white hats, trimmed with chrysanthemums and carried yellow parasols. It won third prize in class A. Another pretty effect was secured by W. N. Patten, whose car was daintily decorated with spotted lilies and maile.

The number of motor cars participating in the parade was smaller than was the case last year, but there were a sufficient number to show what results can be obtained in transforming the motors into bowers of blossoms, boats and even as improbable a creation as a reeking fiery volcano. Many of the designs were beautiful and nearly all showed originality in treatment and a lavish disregard of expense and trouble in their preparation.

A few minutes before 9 o'clock the first motor car wheeled into the Capitol grounds, the rallying point, this being the elaborately-gotten-up yacht Lei, entered by the Waterhouse Trust Co., with F. E. Steere appropriately at the helm. This machine had no sooner backed into its assigned position than the big touring car of J. A. McCandless, a mass of bright yellow chrysanthemums, appeared upon the scene, to be followed by the other many entries. Meanwhile the crowd was gathering, until the grounds were filled by thousands of admiring people, who crowded about the machines, swarmed on the lanais and zig-

zagged about the grounds wherever there was anything to see regardless of the wires stretched along the walks. There was no disorder at any time, however, and the mounted patrolmen had small difficulty at any time in clearing the roadways for the motor cars and vehicles.

These latter lined up along the roadway at the Richards street entrance to the grounds and had a generous share of the applause and appreciation of the big crowd. The decorated bicycles, too, which gathered at the Capitol steps, forming a bright group with their multi-colored trimmings and uniformed riders, were a pleasing feature of the fiesta. The pa-u riders and other equestrians formed into line in front of the drill shed and had the opportunity of making their first appearance to the thronging spectators in a body.

### SCORCH TO BOSTON

New York, March 12—The proposed match race through the snow from this city to Boston started at 7 o'clock this



HONOLULU PARADE—W. N. PATTEN'S CAR

morning from Central Bridge. It had four regularly entered starters: L. H. Perlman, 50-horsepower Welch; Charles Geisenhainer, 50-horsepower Welch; A. L. Kull, 50-horsepower Wayne, and John W. Haynes, 24-horsepower Dragon. Perlman wired from New Rochelle that a Packard, a Locomobile, a Pierce, a Darracq and a Stoddard-Dayton had butted into the race. All early information of the progress of the race comes by wire and phone from Perlman, who says that he made the 58-mile run to Bridgeport in 2 hours, but took an hour more to reach New Haven, 80 miles distant from this city. Later in the afternoon James Kane Mills wired that he, Haynes and the Dragon had reached Hartford first, having passed the Boston Welch at Norwalk, and that they had heard nothing of Perlman. A telegram from Boston tonight states that the Perlman Welch was the first to reach the Hub, reporting there at 9 p. m. R. L. Dunn had his leg broken in an accident.

## STIRRED BY CUP TOUR

### French Papers Protest Against the Proposed Invasion of Europe By the American Cars

Paris, March 1—Paris is aroused over the American gold cup tour. The Paris press has devoted special articles and editorials to the influence and effect of a proposed American tour in Europe composed of a caravan of exclusively American vehicles. Undoubtedly the American car has received the best advertisement that ever came to its lot in this city. All the fears that bothered the French construction world for the past 2 years, aroused periodically about the time of the French salon and especially this year by the publication of the more than significant figures of the world's motor car construction and output, compiled by C. Faroux, have been brought to a head by an appreciation of what is meant by the

American gold cup proposal. The audacity of the promoters has taken away possible ridicule. A careful examination of the event does not tend to diminish the natural alarm felt by all Frenchmen for the future of their one great and flourishing industry—motor car construction.

The ball was set rolling some weeks ago by L'Auto, a journal which devotes several columns to the sport every day, and at first failed to attract the attention it deserved since the notification of the proposed tour came from its New York correspondent and was unconfirmed by immediate later news. The seriousness of the matter is now, however, beyond a doubt and the importance of a 4,000-mile tour to be undertaken this year by an American caravan on European soil and especially in French territory is realized.

There is not a single Paris journal of repute which has failed to echo the cry of alarm, which was quickly taken up by Les Sports, Le Figaro and others. The Frenchman knows already that the American doubts nothing so much as the legend that the French must in the nature of things be the arbiters of the destiny of the world's markets and also that the Yankee recoils before nothing.

A proposal to hold a monster caravan in Europe presents nothing extraordinary to French eyes, but here is the detail which hits hard and sticks fast—the fact that nowhere is the caravan timed to stop several days except in the motor capital—Paris. Evidently, then, it is the French market which is coveted and this is the reason for the delirium which has been observable all the week in motor car circles, causing frantic endeavors on the part of newspaper editors to rouse public opinion and lead direct appeals even to the French government to forbid the land-



ing of the commercially armed force with in the frontiers of France.

It has been declared that French cars—presumably other nation's cars also—have to pay a high rate of protection duty into the United States, amounting to 45 per cent ad valorem. French customs apparently are not so hard on the importer since they are content with a few dollars per hundred pound weight, with a few special tariffs for accessories. This is not the fault of the French customs house, for the moment the French market is seriously threatened up will go the duty on motor cars. This is a certainty, judging from the past experience in French trading and give and take spirit.

The fifty American cars on the continent constitute, it is said, a national danger, and the greatest attempt at ridiculing either the American car or the efforts of its promoters is insufficient to remove the impression from the French mind. On the other hand, could a frank expression of opinion be obtained from the man in the street who has to pay the racket of the present high prices in the trade, it would be seen that he would not be the last man to welcome a proposed American invasion, or indeed any invasion likely to reduce his purchase price. Thus it may be taken that the present outcry is wholly on the part of the French constructor, although up to now he has remained anonymous.

The trade is strong in France and it has a tendency toward wire-pulling, and it is unlikely the present manifestation will result in anything but smoke and press reports. The Echo de Paris believes the proposed tour is a dangerous game—for the French—and considers that the tourists should be refused admittance. The République Française states that the tour is but a thinly-veiled effort to seize the French market. The Paris Sport expresses the hope that other European governments will join with the French in placing a ban on the terrible caravan. L'Eclair hopes that the constructors will rise as one body to protest against the threatened invasion. Le Journal states that the invasion is all the more a real one because of the impossibility to hit back at the Yankees.

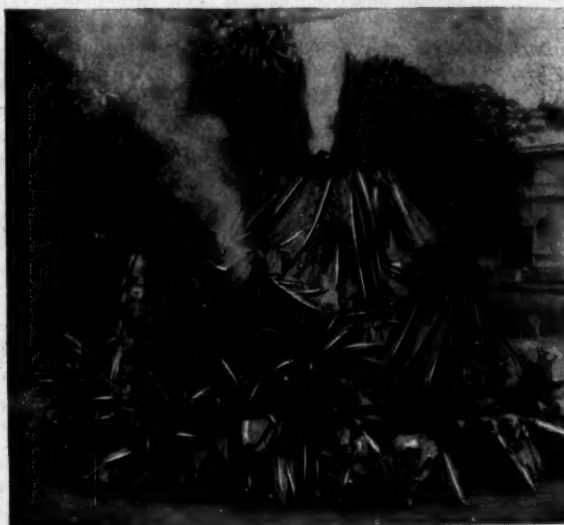
#### ALUMINUM GOING UP

New York, March 10—The price of aluminum has gone up more than 25 per cent and the quality selling at 32 cents 6 weeks ago now is 40 cents and the 36-cent quality, as quoted by the Pittsburg Reduction Co., is at 45 cents. It is said the members of the American Motor Car Manufacturers' Association became wise to the proposed increase and quietly placed their orders for about 4,000,000 pounds, which meant a saving of at least \$320,000. Also it enabled them to be insured deliveries by July and August.

## BEST TIME BY PACKARD

### Runabout Stars in the Pasadena Hill-Climb—Pope-Hartford Touring Car Shows Speed

Los Angeles, Cal., March 6—The second annual hill-climbing contest on the Pasadena-Altaadena course was held last Saturday, having been postponed from February 22 on account of rain. The course has been changed considerable since last year and shortened more than a mile. The two bad turns last year were eliminated and the three turns in this year's course were but slight angles. The grade varies all the way from 2 per cent to over 12 per cent, and much of the way is oiled road. This year's course was hill all the way, while last year there was one slight down grade and quite a little level going. It is not possible to compare the two events, as the courses were so much different. There were more than fifty entries but



HONOLULU PARADE—DENISON'S VOLCANO

about a third did not start for various reasons. The Pope-Hartford touring car cleaned up the touring cars in all classes and was only beaten in time by the Packard and Stoddard-Dayton high-power runabouts. The Packard runabout had no rival in the free-for-all for runabouts for the annual challenge trophy, won last year by the Thomas. The course was 1.4 miles and the Packard averaged better than 45 miles for the whole distance. Probably the biggest surprise of the ten races up the side of Sierra Madre mountains was the fast time made by the little Maxwell runabout, which made a better record than fifteen of the larger cars and was only beaten in time by the Packard, Stoddard-Dayton, Tourist and Reo big runabouts and the Pope-Hartford touring car. After the car events the motor cycles were sent off and made the prettiest finishes of the day and very good time, too. Summary:

Event No. 1, for cars costing \$1,000 and under—Won by 14-horsepower Maxwell; time, 3:03. Also started, Mitchell and Ford.

Event No. 2, for cars costing \$1,500 and under—Won by 20-horsepower Tourist; time, 2:55 4-5; 20-horsepower Mason, second; time, 3:04 3-5; 20-horsepower Reo, third; time, 3:05 3-5.

Event No. 3, for runabouts, \$1,500 and under—Won by 20-horsepower Tourist; time, 2:40; 20-horsepower Reo, second; time, 2:51; 22-horsepower Buick, third; time, 4:05.

Event No. 4, for touring cars, \$1,500 to \$2,000—Won by 30-horsepower Mitchell; time, 3:24 1-5; 20-horsepower Pullman, second; time, 4:09 2-5.

Event No. 5, for runabouts, \$1,500 to \$2,000—Won by 12-horsepower Franklin; time, 3:25 4-5; Elmore, second; time, 3:58 3-5; Mora, third; time, 4:32 4-5.

Event No. 6, for touring cars, \$2,000 to \$2,500—Won by 40-horsepower Rambler; time, 2:49; 35-horsepower Tourist, second; time, 3:00 1-5; 25-horsepower Elmore, third; time, 3:18 3-5; 30-horsepower Dorris, fourth; time, 3:20 3-5; 25-horsepower Knox, fifth; time, 3:24 4-5.

Event No. 7, for runabouts, \$2,000 to \$2,500—Won by 35-horsepower Stoddard-Dayton; time, 2:31; 40-horsepower Tourist, second; time, 3:02 1-5.

Event No. 8, for touring cars, \$2,500 to \$3,000—Won by 30-horsepower Pope-Hartford; time, 2:38 2-5; 40-horsepower Maxwell, second; time, 2:56 1-5; 20-horsepower Franklin, third; time, 3:24 1-5.

Event No. 9, for touring cars, \$3,000 to \$4,000—Won by 40-horsepower Knox; time, 3:44 2-5.

Event No. 10, for runabouts, \$3,000 and over—Won by 30-horsepower Packard; time, 2:14 1-5. American also started.

Event No. 11, for single-cylinder motor cycles—Won by Reading Standard; time, 2:32 2-5; Reading Standard, second; Harley Davidson, third; Indian, fourth.

Event No. 12, for two-cylinder motor cycles—Won by Racycle Special; time, 2:24; Curtis, second; time, 2:35 1-5.

It has been anticipated that the hill-climb would attract entries from the San Francisco show, as originally it was slated to be run the last of that week. But the weather man evidently was against anything of the sort, for the rain he handed out was a little too moist to make hill-climbing a pleasant exercise. So it was necessary to postpone the event and thereby possible entries from the show people escaped. Still, the promoters of the affair feel they gave the spectators a good run for their money in the climb they put on and while the fields were not as large as they might have been the contests were well worth watching.

#### LOOKS GLOOMY FOR SHOW

London, March 2—To judge by the interest, or rather lack of, displayed in the commercial vehicle and motor boat exhibition which opens at Olympia next week under the auspices of the Society of Motor Manufacturers and Traders, the day of these lines has not yet come. The building will be filled with exhibits all right enough, but the business to be done, with the motor bus line in a parlous condition, the motor cab indisposed and the reflex action of their position oppressing the commercial van, is not expected to be great. The motor bus companies are now coming in with their reports of the results of the past year's working and they are so uniformly depressing that it is feared that the whole truth has not been told.

## ANY MOTOR CAN USE IT

### Government Declares American Engines Are Able to Run on Alcohol Without Change

Washington, D. C., March 9—A paper on the use of alcohol and gasoline in farm engines, based in part upon experiments carried out by C. E. Lucke, assistant professor of mechanical engineering in Columbia university, and others, is about to be issued by the department of agriculture. Owing to the fact that there as not on the American market any engines designed especially for alcohol, the experiments so far made have been with alcohol in the gasoline and kerosene engines familiar to the American market. The purpose of these experiments is twofold—to determine what can be done with alcohol in the existing engines and to learn what changes in the mechanism of the engines are necessary to secure the highest efficiency in the use of alcohol as a fuel. Since the removal of the tax on denatured alcohol many inquiries as to the possibilities of its use have been made of government officials, and the forthcoming monograph will answer these inquiries in part.

The following conclusions regarding the use of alcohol as fuel for engines as compared with gasoline are based on the department's experiments; upon results of the European experiments and investigations, and upon the general knowledge of the authors. Any engine on the American market today operating with gasoline or kerosene can operate with alcohol fuel without any structural change whatever, with proper manipulation. Alcohol contains approximately 0.6 of the heating value of gasoline, by weight, and in the department's experiments a small engine required 1.8 times as much alcohol as gasoline per horsepower hour. This corresponds closely with the relative heating value of the fuels, indicating practically the same thermal efficiency with the two when vaporization is complete.

In some cases carbureters designed for gasoline do not vaporize all the alcohol supplied, and in such cases the excess of alcohol consumed is greater than indicated above. The absolute excess of alcohol consumed over gasoline or kerosene will be reduced by such changes as will increase the thermal efficiency of the engine. The thermal efficiency of these engines can be improved when they are to be operated by alcohol, first by altering the construction of the carbureter to accomplish complete vaporization, and second by increasing the compression materially. An engine designed for gasoline or kerosene can, without any material alteration to adapt it to alcohol, give slightly more power—about 10 per cent—than when operated with gasoline, but this increase is at the expense of greater consumption of fuel. By alterations design to adapt the engine to

new fuel this excess of power may be increased to about 20 per cent.

Storage of alcohol and its use in engines is much less dangerous than that of gasoline, as well as decidedly more pleasant. The exhaust from an alcohol engine is less likely to be offensive than the exhaust from a gasoline engine, although there may be some odor, due to lubricating oil and imperfect combustion, if the engine is not skilfully operated. There seems to be no tendency for the interior of an alcohol engine to become sooty, as is the case with gasoline. With proper manipulation there seems to be no undue corrosion of the interior due to the use of alcohol. If, as times go on, kerosene and its distillates become scarcer and dearer by reason of exhaustion of natural deposits, the alcohol engine will become a stronger and stronger competitor, with a possibility that in time it may supplant the gasoline engine.

By reason of its cleanliness in handling the fuel, increased safety in fuel storage and less offensiveness in the exhaust, alcohol engines will in part displace gasoline engines for motor car work, but only when cost of fuel for operation is a subordinate consideration. In this field it is impossible to conveniently increase the compression because of starting difficulties, so that the efficiency cannot be improved as conveniently as in other types of engines. By reason of its greater safety and its adaptability to the work, alcohol should immediately supplant gasoline for use in boats. In most localities it is unlikely that alcohol power will be cheaper or as cheap as gasoline power for some time.

### A. A. A. IS FLOURISHING

New York, March 9—Members of the A. A. A. directorate made two out-of-town pilgrimages this week with the object of forming state associations in Connecticut and Pennsylvania. In Philadelphia they conferred with members of the Pennsylvania Motor Federation. On behalf of the Quakers the participants in the conference were: Isaac Starr, president of the federation and also head of the Automobile Club of Philadelphia; Robert P. Hooper, of the Germantown Automobile Club and chairman of the A. A. A. good roads board; Paul C. Wolff, secretary of the Automobile Club of Pittsburg, and Phillip S. Flinn, a member of the Pittsburg organization and a member of the executive committee of the A. A. A. touring board. The question of affiliation with the A. A. A. was discussed. The visiting missionaries expressed themselves as much encouraged with the prospects of swinging the Quaker clubs into the A. A. A. column. The Connecticut conference was held at the Bridgeport Automobile Club. There was an attendance of fifty members and thirty-two new members were elected. The Hartford and New Britain clubs were represented. The proposition to form a state association was received with favor and will be put through.

## FLORIO FIELD MADE UP

### Forty-Nine Racers Representing Four Different Countries in the Italian Classic

Paris, March 2—The German Emperor's cup has the largest number of engagements of any event this year. The Italian Targa Florio to be held in Sicily on April 2 comes next. The lists closed at the end of February on forty-nine engagements, including a very good assortment of cars from four different nations.

Italy, of course, heads the list for the Targa Florio cup with nineteen cars engaged. France comes next with fifteen, and Germany and Switzerland have four and eight cars entered respectively. In 1906 there were but ten cars. The cars themselves are of makes which do not figure for the most part in either the grand prix or the Emperor's cup. The fairness of the regulations and the simplicity of the rules attracted a large number of entries and the cars are of the best.

There are three Fiats, four Italas, three Italian Daimlers, four Isotta Fraschinis, three Juniors and two Diatto-Clements to represent Italian prowess, while France puts forth as champions two de Dietrichs, two Darracqs, three Bayards, two Berliets, two Radians, three Gobrons, two Aigner, one Gaggan and a C. V. R. Germany is represented by three Benz and an Opel car, Switzerland enters two Lucias, four Zusts and two Digne cars.

The winner of this year's race obtains the Targa Florio and also \$3,000 in cash. There also are some smaller prizes in cash to the second and third finishers. The race takes place over a very hilly circuit of nearly 300 miles and the good points of the cars are brought out. Cagno in an Itala car won last year's race in 9½ hours. An Itala car was second and fourth and a Berliet car was third. The Targa Florio bids fair to be the first great motor race of the present year and the winner would be hard to select.

The Pekin-Paris committee is beginning to discover that constructors and sportsmen are not alone in the interest attaching to the proposed Pekin-Paris tour. The great councillor of the Chinese emperor is also awake to the fact that something unusual is taking place and is likely to affect his master's empire, and has inquired of the French government the number of motor cars which are likely to take part. The Chinese government evidently fears international complications if the caravan is in any way molested. A reply has been given to the effect that the caravan will proceed directly to Irkutsk from Pekin, following the caravan road. Also it is hinted that the number of cars may be limited to eight—the best eight—chosen by the competitors themselves. The Chinese government has stated that the roads will be had through Manchuria and the



director of the Russo-Chinese bank in those parts confirms this in stating that the roads are wide enough for motors but steep and stony. Twenty-two entries have been received to date despite the fact that there will be no four-flushing in this event, as each entrant must post \$400 as a guaranty that he intends competing and is not entering just for advertising. He gets the \$400 back if he starts with the others from the city of Peking.

### CONVINCES THE FARMERS

Ionia, Mich., March 11—State Highway Commissioner Horatio S. Earle at the state farmers' institute in this city announced that a bill has passed the state senate for the purchase of \$7,000 worth of road-making machinery for state institutions, and said this machinery will be brought to Ionia and will be operated by some twenty or thirty prisoners at the state reformatory. The machinery will first be used to build a road from the reformatory to the city. Mr. Earle presented figures showing Michigan has built with the \$98,156 in the highway fund for the 2 years 93 miles of state reward roads. Some of it is stone and some gravel. At present, he said, there are between 70 and 80 miles in course of construction. This is four times as much as any other state has built under the first 2 years of a state roads law and at one-third the cost of similar roads in New Jersey or Connecticut. Mr. Earle told of his investigations in the trap rock country of the upper peninsula, where he hopes to see the state penal institutions located and the convicts employed for breaking stone and road making. The state can secure 200 acres of this trap rock for the asking, he said. The boats will haul it to any lake port for 50 cents per ton and the railroads will handle it for a price which will permit road laying in any portion of Michigan for \$1 per ton cartage. Mr. Earle has before the legislature bills to change the road tax law, making one tax for repairs, to be made where the tax is levied, and one for highway maintenance, doing away with road work. His outline of the bills was greeted with cheers that showed the farmers are with him.

### WEEK AT MONACO

Paris, March 2—Monaco, it has been stated, has seen its best days and its glories are departing. The year 1907 gives the lie to this assertion, for there are more entries this year than ever before. Italy, Germany, Belgium, France, England and Switzerland are all represented and there is also one engagement—the N. W., burning crude petroleum oil as fuel—from the United States. There is a general total of ninety engagements against eighty-three in 1906. The racers are fewer this year, one class having been abandoned. There are in addition twelve fleet vedettes and four hydroplanes, which later make their debut in the open sea.

## HAS TWO MORE BOARDS

### Makeup of 1907 Legislation and Good Roads Committees Announced by A. A. A.

New York, March 11—President Hotchkiss of the American Automobile Association has announced two of the standing committees for this year—the good roads and the legislative committees. The good roads aggregation is under the leadership of R. P. Hooper of Germantown, Pa., and the other members of the board are as follows: John Farson, Chicago; Augustus Post, New York city; W. P. Murray, Cleveland, O.; E. Kneeland, Pittsburg, Pa.; William T. White, Trenton, N. J.; H. H. Trice, Norfolk, Va.; C. Gordon Neff, Cincinnati, O.; John M. Satterfield, Buffalo, N. Y.; Frank X. Mudd, Chicago; W. R. B. Whittier, Atlanta, Ga.; W. H. Chase, Leominster, Mass.; Henry G. Strong, Rochester, N. Y.; Arthur Stein, Cincinnati, O.; Walter E. Edge, Atlantic City, N. J.; R. A. Whitney, Peoria, Ill.; William Neil, Columbus, O.; B. Clinton Slagle, Baltimore, Md.; F. A. Burrell, New York; Joseph H. Wood, Orange, N. J.; A. E. Damange, Bloomington, Ill.; Daniel P. Ray, Olean, N. Y.; G. K. Wheeler, Kansas City, Mo.; S. W. Kent Miller, Hagerstown, Md.; George H. West, Detroit, Mich.; Palmer Abbott, New Orleans, La.; George M. Palmer, Mankato, Minn.; C. Roy McCanna, Burlington, Wis.; A. G. Widmer, Seymour, Ia.; Ben Weille, Paducah, Ky.; Dr. F. L. Bartlett, Denver, Colo.; A. J. Smith, Los Angeles, Cal.

Chairman Hooper expects shortly to call a meeting of the board for the purpose of subdividing its work and appointing its executive and other committees. The board will also doubtless take up a question at present much discussed by motorists, that is, whether they and their associations should not from this time take an open position instead of a covert one as to the good roads movement in the various states. It has often been said that owing to the early antagonism between the motorist and the farmer, the two classes of the community most interested in good roads, more would be accomplished by leaving these movements to grange organization and legislators representing rural communities. Of late, however, it has been thought that a more open advocacy by motorists would be both wise and profitable. Chairman Hooper will present this question and on its determination will perhaps depend the attitude not merely of the A. A. A., but also of its affiliated state associations and clubs in present day movements looking toward good roads. Another subject which will be discussed will be the best ways and means to accomplish federal aid toward the improvement of at least the trunk roads in the various states.

It will be noticed that on the legislative

boards are included representatives of the motor manufacturing associations, including Chairman Terry, counsel of the National Association of Automobile Manufacturers, it being the belief of the executive officers of the American Automobile Association that such associations and the national body of motorists can best work together, both to secure and to prevent prejudiced legislation. Chairman Terry shortly will call a meeting of the board in New York city. The board is made up as follows: C. T. Terry, New York, chairman; W. W. Niles, New York; Sidney S. Gorham, Chicago; Francis A. Hurtubis, Jr., Boston; James T. Drought, Milwaukee; Roy F. Britton, St. Louis; M. Felton Hatcher, Macon, Ga.; Osborn I. Yellott, Baltimore; J. Jerome Hahn, Providence, R. I.; Wade Cushing, Cincinnati; Robert Brown, Indianapolis; J. B. Parkinson, Daytona, Fla.; William McL. Faysoux, New Orleans; Robert Lee Morrell, New York; D. F. Gay, Worcester, Mass.; Walter S. Schutz, Hartford, Conn.; G. Allen Hancock, Los Angeles, Cal.; James E. Cooper, New Britain, Conn.; John L. Griggs, Paterson, N. J.; Dr. F. L. Bartlett, Denver; D. M. Ferry, Jr., Detroit; C. C. La Forge, Decatur, Ill.; Reuel Small, Washington, D. C.; Alexander Schwalbach, Brooklyn, N. Y.; G. Douglas Bartlett, Philadelphia; Homer H. Johnson, Cleveland; F. D. Larabee, Minneapolis; E. W. Seeds, Columbus, O.; E. J. Kent, Pittsburg, Pa.; William H. Spear, Jersey City; W. K. Bracken, Bloomington, Ill.; Arthur J. Plummer, Malden, Mass.; Charles H. Burras, Chicago; D. Emmet Welch, Grand Rapids, Mich.; Carlton Godfrey, Atlantic City, N. J.; John H. Barhite, Rochester, N. Y.; William Walker Smith, Cincinnati; H. H. Myers, Duluth, Minn.; George H. Wilson, Louisville, Ky.; George C. John, St. Louis, Mo., and Giles H. Stilwell, Syracuse, N. Y.

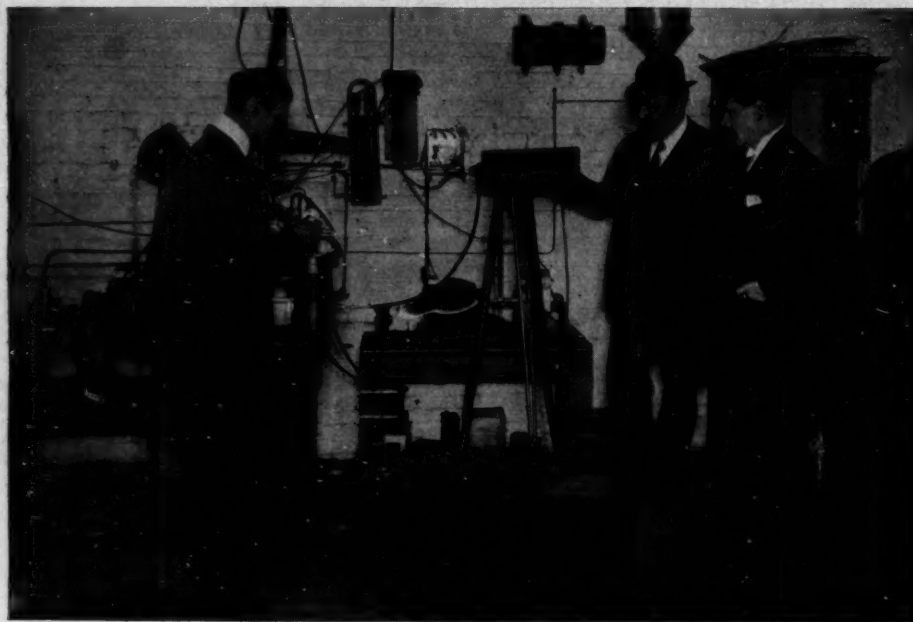
### CLEVELAND ACTIVITY

Cleveland, O., March 11—The Cleveland Automobile Club is being called upon to suggest methods for improving the highways, erect guide boards and the like. The Association of Township Trustees of Ohio will hold a meeting in Cleveland March 30 and has invited Secretary Goddard of the Cleveland club to be present and make some suggestions. A delegation of citizens from the neighboring town of Brecksville called at the Cleveland club the other day to invite the club to co-operate in the erection of guide boards.

### SHOW WEEK FOR CHICAGO

Chicago, March 11—The Chicago Automobile Trade Association has decided to hold a show some time in April and has appointed a committee consisting of Ralph Temple, A. F. Chase, F. W. Cornish, Thomas Hay and Henry Paulman to handle the details of the affair. The dealers also voted \$250 toward the signboard campaign now being carried on by the allied motoring interests of the state.

# ALCOHOL-ACETYLENE GAS FOR MOTOR CARS



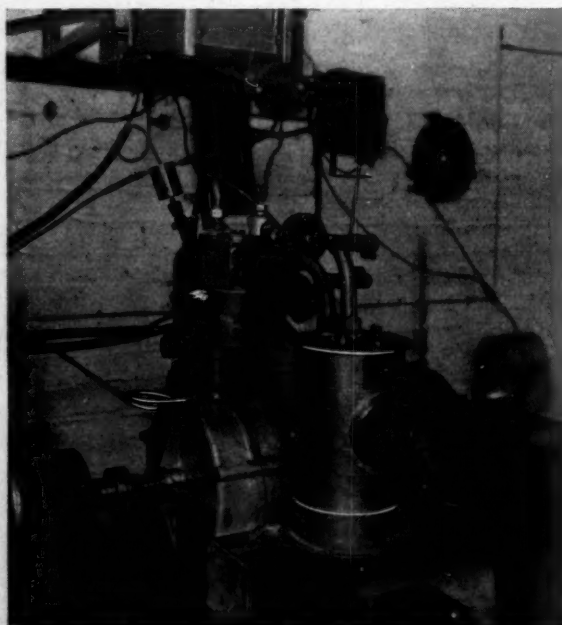
TRACY, WHITE AND BARKER TESTING ALCOHOL-ACETYLENE

ALL attempts to use denatured alcohol as fuel for the motor in test runs made with motor cars since the free alcohol law went into effect on January 1 last have clearly demonstrated the unsuitability of the new hydrocarbon for use in the high-speed, low-compression motor car engines now manufactured. It is impossible to start cold on alcohol alone, because it is much less volatile than gasoline and has a higher ignition temperature, so that without the application of external heat the air taken in through the carbureter will not evaporate enough alcohol to form an inflammable vapor. When the engine has been started on gasoline and warmed up to a temperature at which alcohol would vaporize satisfactorily, it was determined that the compression of 60 to 70 pounds per square inch in the engine was insufficient for the best results and that the alcohol vapor burned so slowly that much of the energy was lost in the exhaust when running the engine at normal speed. Stationary alcohol engines, which have been brought to a high state of perfection in France and Germany, have compression as high as 120 pounds and operate most efficiently at from 200 to 300 revolutions per minute. As a result of these conditions there was a great waste of fuel in the motor car test runs and, although they showed that the cars would run on alcohol alone after being started, they failed to demonstrate any economy in the use of alcohol, even upon the assumption that eventually the new fuel will be marketed at a price to compete with gasoline, as the cars would not run more than 7 miles on a gallon, and extraordi-

nary quantities had to be used to do this.

To overcome these objections and make it possible to utilize commercial alcohol in the present type of gasoline engine without any alteration further than a change of carbureters or the addition of a supplemental device, a new process known as the Barker-White system was invented and patented last year by F. W. Barker and Thomas L. White, of New York city.

During the past winter a series of laboratory experiments with this system has been made by Joseph Tracy, until results have been attained that warrant the statement that the new fuel develops as great efficiency in a given engine as gasoline and that the motor can be started cold with it.



SHOWING SLEEVE AROUND EXHAUST AND MANOGRAPH

The invention is, broadly, "the process of producing a gas for power purposes which consists in carbureting air with dilute alcohol and then bringing such carbureted air into contact with calcium carbide." By passing the vapor of alcohol and air as formed in the ordinary spray carbureter through a layer of calcium carbide a variety of effects, all desirable, are secured. The first is to extract from the alcohol the greater part of the water contained in it, which, in commercial alcohol, is present to the amount of 10 per cent or more. So great is the affinity of alcohol for water that it is impracticable to extract this final percentage. As water has no fuel value and its only effect when present in the cylinder is to reduce the temperature and consequently the efficiency of the engine, it is altogether desirable to remove it. This is done by the carbide, which dehydrates the vapor on its way to the cylinder. As the water unites with the carbide it is dissociated into hydrogen and oxygen, the former combining with the carbon in the carbide to form acetylene gas, and the oxygen uniting with the calcium chloride and forming calcium oxide or lime. The chemical reaction generates heat, which assists to further volatilize the alcohol before it enters the explosion chamber, thereby reducing its flashing point, and the liberated acetylene gas commingles with the alcohol vapor, effecting both a mechanical mixture and a subtle chemical combination the exact nature of which has not yet been determined. Acetylene burns with great rapidity, offsetting the slow burning of the alcohol. Each of the myriads of molecules in the combustion chamber has a detonating action as soon as excessive pressure is set up in the compressed mass by the heat generated at the spark plug, and inflammation is almost simultaneous in all parts of the chamber. Heat from the burning acetylene ignites the molecules of alcohol hydro-carbon, the resulting effect being that the whole charge burns much more quickly than would alcohol vapor alone. In brief, the two gases have a counteracting effect that can by proper regulation of the quantity of water present in the alcohol, be made to approach very closely the properties of the hydro-carbon of gasoline. While actual detonation or explosion of the gas would be injurious, the more nearly one can approach to complete combustion at the instant of maximum pressure, or minimum volume, utilizing the entire downward stroke of the piston for expansion only, the greater the efficiency developed. With the alcohol-acetylene mixture, which has been given the distinctive name "Alkoethine," combustion

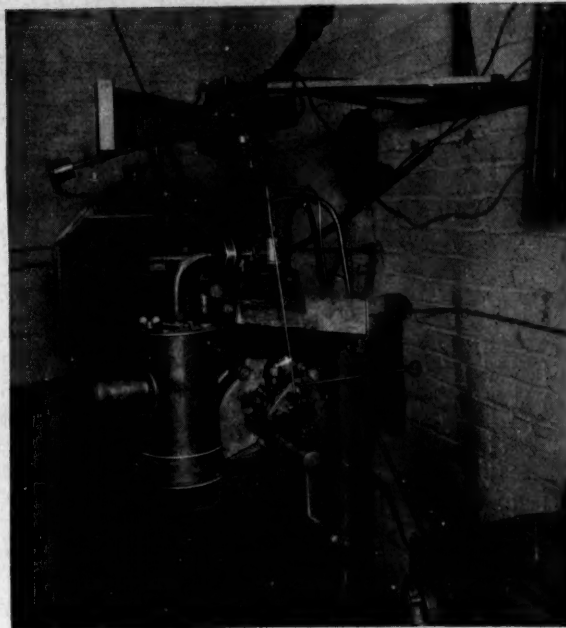


occurs early in the piston stroke and only expansion later, so that before the exhaust valve opens combustion has been completed, which is not true of alcohol vapor when the engine is run at high speed.

A decided advantage is that an excess of water in the alcohol as purchased is not an objection; on the contrary, the greater the quantity of water the more rapid the engine will run. In the tests as carried out by Mr. Tracy, with the single-cylinder De Dion engine of 3 to 3½-horsepower, it has been found that the addition of water to up to a total of 18 per cent gives the best results, increasing the proportion of acetylene gas in the ultimate explosive mixture to an amount that gives results most nearly approaching those of gasoline. There is, however, a wide latitude of choice, ranging from alcohol undiluted to a solution containing 25 per cent of water. Since the addition of water increases the bulk of the fuel and water costs nothing, it offsets the cost of the carbide consumed, which can be bought in 100-pound lots at a cost of about 3 cents a pound.

No quantitative tests have yet been made with the apparatus, which is merely a large brass cylinder connected with the cylinder of the engine and with an ordinary float-feed spray carbureter by copper piping and has a diaphragm of wire netting upon which lies the layer of calcium carbide of quarter-inch size. Therefore the proportions of carbide and water used to a gallon of commercial alcohol consumed to produce a given indicated horsepower have not been determined; roughly, however, about 1 pound of carbide is used to one gallon of the 18 per cent solution of alcohol and water. If alcohol could be bought at 25 cents a gallon—the cost of 76 degree gasoline at retail—the quantity of water added to raise the usual 10 per cent of water contained in it up to 18 per cent would represent an increase in bulk of slightly more than one-twelfth, effecting a saving of 2 cents. As the carbide costs 3 cents, the difference in cost between gasoline vapor and alkoethine would amount approximately to 1 cent per gallon in favor of the former.

In the experiments that have been conducted it has been found that all the heat that could be collected from the exhaust by means of a long sleeve is just sufficient to fully vaporize the alcohol in the carbureter. To start cold the engine is "primed" by throwing a wineglass full of alcohol solution directly into the carbide chamber to generate an excess of acetylene. The chemical action liberates heat from the carbide, which further evaporates the alcohol just before it enters the engine cylinder. As 1 pound of carbide contains 900 British thermal units and



CONNECTIONS FROM CARBURETER TO CARBIDE TANK

there are approximately 450 British thermal units of latent heat in 1 pound of alcohol, the decomposition of a pound of the former will supply enough heat to fully evaporate 2 pounds of absolute alcohol from a liquid state. The size of the carbide lumps and their disposition in the carbide chamber are of considerable importance, as the vapor must pass through the mass freely and at the same time come in contact with a large surface of the carbide. Experiments are to be made in the near future to ascertain what size will give the best general results.

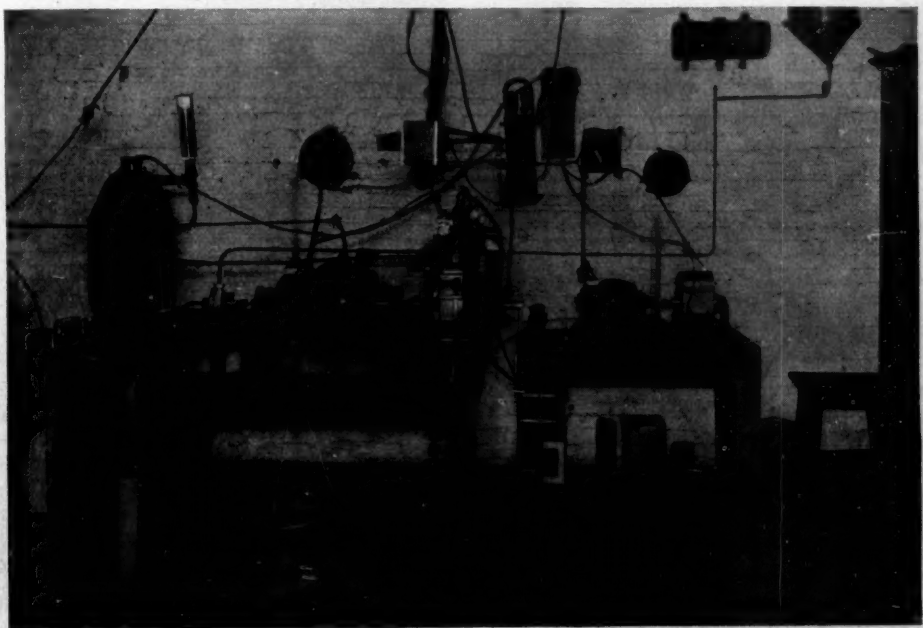
It has been found that perfect combustion of the mixture takes place through a wider range of proportions of gas and air than is the case with gasoline. With gasoline and air the range is from one part of liquid to eight parts of air to one part of liquid to fourteen parts of air, while with

pure acetylene and air the range is from one to three all the way to one to twenty-two parts. The range with the alcohol-acetylene combination is about half way between these, varying according to the quantity of water contained in the alcohol. Alkoethine can be regulated so that it will ignite at the same sparking point as gasoline, while pure alcohol, which is slow burning, it is necessary to advance the spark much more. When the mixture begins to get so rich that it deposits soot, ignition becomes difficult and even ceases at times.

Indicator diagrams taken with manograph instruments during the tests and at the demonstration before the press representatives on March 5 showed results quite as good as cards taken from the same engine using gasoline. With a compression of 65 pounds, and advanced ignition, a very high peak was obtained, with maximum pressures of more than 240 pounds.

While the engine used developed highest efficiency at 1,100 revolutions per minute when running on gasoline, with alkoethine the efficiency did not decrease until 1,900 revolutions per minute were attained. And while the maximum speed on gasoline was 1,700, the motor has been run up to 2,100 on the alcohol-acetylene combination.

The apparatus shown in the accompanying flashlight photographs is merely for testing the principles of the invention, and is the first apparatus constructed for the purpose, which makes the results secured all the more gratifying. No attempt has yet been made to design a commercial form of the device, but the tests have proven conclusively the feasibility of the principle, and indicate how simple the system is.



ENTIRE TESTING APPARATUS USED BY TRACY



# MOTOR CAR SHOP KINKS



## SPARK COIL TROUBLES

Among possible troubles with spark coils are the following: If the trembler spring is too light, a small magnetic force in the core will be sufficient to attract the armature, and rupture may take place at the contacts before the current has had time to build itself up in the coil. On the other hand, an over stiff spring requires considerable current to make it work, and will cause misfiring before the battery is spent. In some coils the screws which hold the coil proper against the support carrying the trembler show a tendency to loosen, allowing the end of the core to settle away from the armature as well as giving the connections of the coil inside a chance to break. If the screws by which the coil box is held to the dash or to its brackets are so long as to go through the case, it is possible for the secondary current to ground itself through those screws. An internal switch in the coil box may give poor contact owing to wax from the coil getting on the contacts. The platinum points in the screw or armature blade may loosen and cause irregular firing. This may also happen to the button on the armature, which pulls down the blade. A coil may be overheated by the use of too strong a current, causing the insulating wax to melt and permit internal short-circuiting of the secondary winding. The same thing may occur if an ordinary coil for one cylinder is used for all four cylinders by means of a distributor. In order to tune the tremblers of several coils alike, it is necessary not only that the armature spring tensions be alike, but that the distance from the end of the core to the armature shall be the same for all the coils. If one core has some iron wires projecting above the others, it will be well to dismount the trembler and file down these wires, afterward readjusting the tremblers. Most coils of the present time are designed to show a current consumption of not over  $\frac{1}{2}$  ampere when tested with the circuit closed and the trembler working. If the consumption is much in excess of this, the makers should be applied to for advice as to the cause of the trouble, which may be improper trembler adjustment or unsuitable batteries. Some coils are designed to take from 4 to 5 volts and do not require more. Others are designed to take from 6 to 8 volts and will not work well with less. The greater the number of cells in series, the larger will be the current and the more rapidly the battery will be exhausted. An economical way to use dry cells is to siamese the two sets, giving two in multiple and the proper number in series. This will increase the current in the coil a trifle, but will reduce the current passing through each individual cell. A battery

tester should be used at intervals, and cells testing below 5 amperes should be thrown away. It has been claimed, however, that batteries testing 3 amperes are available, but this is not so.

## ANNEALING TOOL STEEL

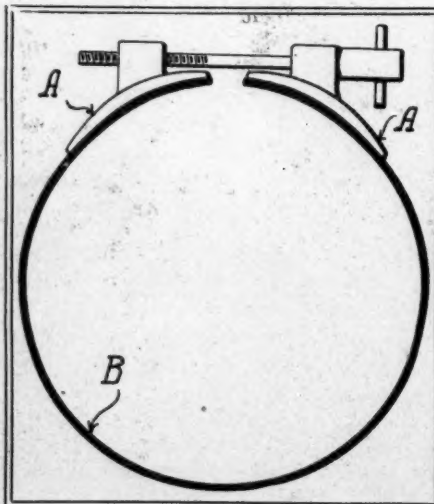
The proper way to anneal tool steel, if accurate work is to be done, is to pack it in granulated charcoal in a sealed cast iron box, as is done in case-hardening. The length of time required to heat the job clear through will depend on its size, and may be as much as 24 hours. After this the fire is allowed to cool very slowly, and the work is not taken out till it can be handled with bare hands. For tempering tool steel the best thing probably is a gas forge. To obtain accurate results a thermometer should be used, which can be obtained of the concerns making gas forges.

## CASE-HARDENING SMALL PINS

Small iron or mild steel pins and screws are commonly case-hardened either by packing them in bonedust or by the use of a bath of melted cyanide of potassium. The following method, however, is simpler and more convenient: Make a saturated solution of cyanide of potassium in hot water and allow it to cool. Heat the pins to a low red heat and dip them in the solution. Reheat to a low red again and plunge into cold water. If the pins are found on trial to be hardened too deep, use a lower temperature on reheating.

## CLOSING A PISTON RING

A simple device for closing a piston ring preparatory to setting it in a clamp arbor for grinding the outside is shown in the sketch. The parts A A may be simple brass castings, and the strip B is of leather, which allows the ring to assume its own shape when closed, without being deformed, as it would be if the strip were made of any sort of metal.



CLOSING A PISTON RING

## SAFE WEAR ON A BEARING

Every repairman has seen mainshaft bearings worn a good deal more than a hundredth of an inch loose without cutting or apparent injury, and he has seen crankpin bearings so loose that two or three times the thickness of a visiting card could be inserted. On the other hand, every repairman has seen crankshafts broken under circumstances that seemed to connect the break pretty plainly with springing of the shaft in its endeavor to accommodate itself to bearings worn badly out of line. The real thing that determines the amount of permissible wear is not the question of a few more or less thousandths of an inch of looseness, but whether, when the bearing has worn, the shaft is still properly aligned and supported, and is free from knocking. In the main shaft bearings of a vertical engine, with the possible exception of the front end, the pressure is always downward, and the chief thing to be considered is whether the bearings wear evenly, since if they do not the shaft will spring. As the rear bearing carries the flywheel it must be the longest. The front bearing is apt to gather dust and cut, and it needs, for this reason, to be longer than would otherwise be necessary. The middle bearing in any three-bearing engine is apt to be much too short for the double duty it has to perform. Again, a shaft of chrome-nickel steel will stand bending much longer than a machinery steel shaft, consequently there are many factors to be taken into account. The main bearings of a double opposed engine will pound when only a little loose, because the pressure alternates from one side to the other. As regards the crankpin bearings, it may be said that these can safely run looser than the main bearing, since they do not have to align with anything else, and, except when the engine is run at full speed, the compression is likely to take up the slack in the bearing before ignition, thus avoiding a knock. If, however, a knock occurs it is time to take up the bearing. If a bearing is accurately scraped and aligned and the shaft is truly circular, the shaft and bearing can be fitted within less than .001 inch of each other by relieving the sides of the bearing a little for oil. Regarding the permissible wear, perhaps a safe rule is to say that the crankpin bearings may be allowed to run .01 inch loose before taking up, and the main shaft bearings half that amount. These are safe figures, except for poor steel or very high speeds, and a properly designed and lubricated engine should not wear more than this in a season. In fact, many modern engines will run two seasons with less than the above wear and there have been made even better records.





# THE READERS' CLEARING HOUSE



## DESIGN OF THE MAXWELL

Tarrytown, N. Y.—Editor Motor Age—In your issue of February 14 you have credited Mr. Brush as being the designer of the Maxwell. While we feel sure this is a mistake, we thought that in justice to ourselves we should contradict the statement. As you know, the Maxwell car was designed entirely by J. D. Maxwell. Mr. Brush has no connection whatever with the Maxwell-Briscoe Motor Co. We do not know who is responsible for this statement, but we feel it must have been inserted through a mistake, as no one would intentionally take the credit of designing a car, particularly when he had no connection whatever with the company. We trust you will put this matter in the proper light in your columns. Another statement of yours in the issue of February 21, page 25, is that you credit the Cadillac with the 1,000-mile non-engine stop record in 71 hours 32 minutes, following with the statement that it is the best non-engine stop record for a one or two-cylinder car, the best previous distance being 600 miles. If you will refer to the non-stop record of 3,000% miles made by the Maxwell last fall in 7 days, 7 hours and 31 minutes, you will find that the first 1,137 miles were made in 66 hours 32 minutes, which beats by 5 hours the record of the Cadillac for 1,000 miles. We do not wish to detract from the performance of the Cadillac, since the record of 1,000 miles in 71 hours is excellent, but we only thought in justice to ourselves the credit should be given to the car that actually made the record, not only 1,137 miles in 66 hours and 32 minutes, but 3,000% miles in 7 days, 7 hours and 31 minutes.—Maxwell-Briscoe Motor Co.

## PROBABLY LOOSE CONNECTION

Manchester, Ia.—Editor Motor Age—We have a 1904 model Oldsmobile run-about which will not run on an early spark. It will simply die, but it runs all right on a late spark, though it gets hot very quickly. The valves are all timed right; fires 20 degrees before center when the spark is early. If you can help us out it will be greatly appreciated.—Manchester Auto Co.

Judging from the letter the explosions are actually skipped when the spark is advanced, and are not simply weaker than they should be. The probable cause seems to be a loose connection somewhere, probably close to the timer, but it might be possible for the mixture to be so far wrong that it would not ignite except under full compression. The overheating might be due to poor mixture or simply to the late spark. If the trouble is not located from the above and fuller particulars are sent Motor Age may be able to

make further suggestions. Readers frequently fail to describe all the trouble or the symptoms, knowing only that a trouble exists. Every little thing is likely to have a bearing on the case, so that nothing should be omitted in writing for information in order to get away from the trouble.

## BEST GEAR RATIO

West Stapleton, N. Y.—Editor Motor Age—In reply to your correspondent, P. A. C., in the issue of February 28, I beg to say I have had experience since 1900 in the daily use of motor cars and have used machines with different ratios of gearing. My residence is 400 feet higher and  $3\frac{1}{2}$  miles distant from my business office. This distance is traversed with a motor car morning and night since 1900. The road is hilly, so it gives an excellent test of the proper gearing of cars. My first purchase in 1900 was of a French car having a high ratio gearing that required changing from the high to the low gear seven times during the trip up the hills. In 1903 I purchased a Duryea with a ratio of gearing that gave a great deal more power compared with the weight of the car. In 1905 I added to the stable a Winton four-cylinder car with a ratio of gearing five to one. In 1906 I added a four-cylinder Cadillac car with a ratio of gearing of four and one-half to one. I still have all of these cars in service in my business and family use. Excepting the first car, the ratio of gearing was especially ordered by me, and represents my experience at that time. From my experience I arranged a formula which took into consideration the number, diameter and stroke of the cylinders, the gearing ratio, the total weight of the car with its passengers and the diameter of the driving wheels. The result of my experience is shown in the last car purchased, the Cadillac four-cylinder, with a gearing ratio of four and one-half to one. Using the same formula by which I decided upon the gearing ratio of the Cadillac, the gearing ratio I would advise for your correspondent would be a ratio of four and one-half to one. This will give an engine speed of 40 revolutions per minute when the car is running at 20 miles per hour. The machine will run up to 25 miles an hour, but will not be a high speed car. This machine will take all ordinary hills met with in touring on the high gear, will traverse muddy and sandy stretches with ease and will run slow enough on the high gear to follow behind teams. The low gear will be used only in starting, in crossing bad gutters and sometimes in following a slow-moving team up a hill. It is so little used that the wear on it is insignificant. The machine frequently is started on the high gear without using the low gear for that purpose. The smoothness or

sweetness of running is equal to the six-cylinder cars. I am quite aware that manufacturers and other persons that your correspondent will talk with will think this too low a gear and he will be urged to use a higher speeded car. I still own and use these cars, and if your correspondent can visit me I would be glad to let him see the advantages of the gear recommended and give him the benefit of my experience.—Charles W. Hunt.

## VALVE TIMING INCORRECT

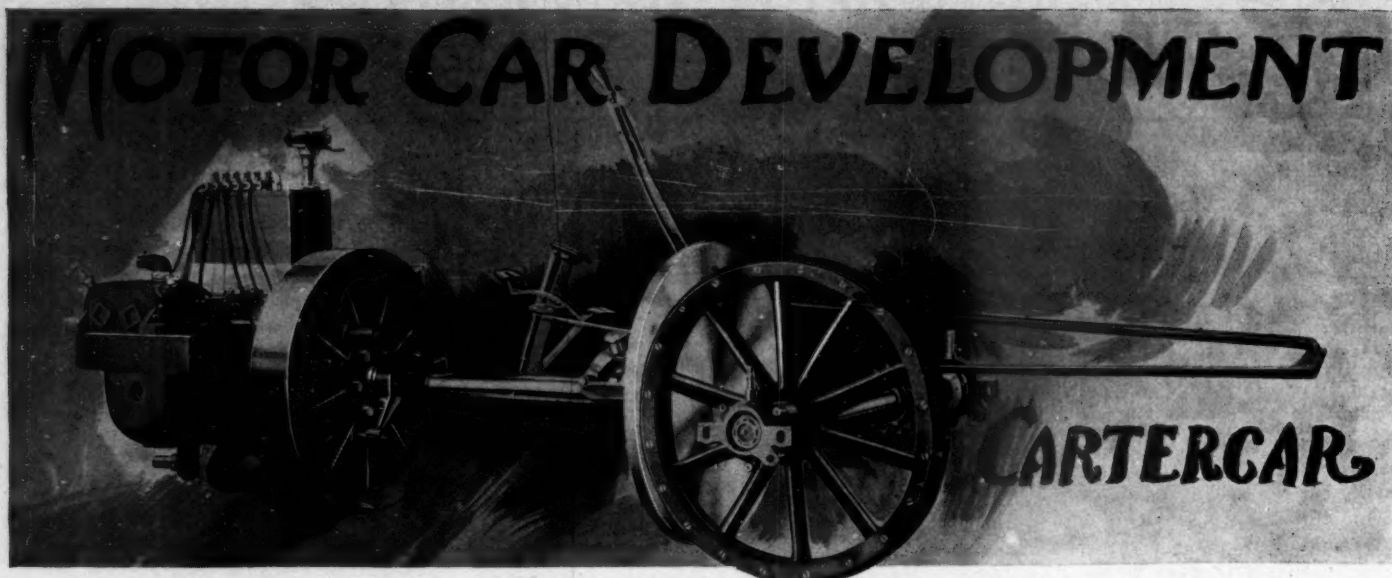
Kansas City, Mo.—Editor Motor Age—Will you kindly inform me through the columns of the Readers' Clearing House how cams should be set on a double opposed motor? The cylinders are  $4\frac{1}{2}$  by 5-inch, and seem large enough, but for some reason I cannot get enough power. I had a mechanic fit the cams and he ground them smaller, but with no better results. I sent to the makers for new cams and have tried every way I could think of to set the cams correctly. At present the exhaust opens up  $\frac{3}{4}$  inch before end of stroke and continues open until piston head has traveled  $\frac{1}{4}$  inch beyond the top center. The exhaust then closes and immediately the inlet opens and remains open until  $\frac{3}{8}$  inch beyond bottom center. I have a Kingston carburetor and have tried to increase the power of the engine by regulating it, but have had no satisfaction. Even on the level the engine has a hard job to pull the car along on high speed. I have tried setting the cams later, but with no good results. The muffler has been cleaned.—Stanley Savage.

The exhaust valves open a little too early and close a little too late. Probably better results would be obtained if they opened with the piston  $\frac{1}{2}$  inch from the end of its stroke and  $\frac{1}{8}$  inch from the top center. It does not seem, however, that the cause of deficient power is primarily in the valve timing. It might be in deficient compression or in poor carburetor adjustment, or it might be elsewhere. There is in mind a certain double opposed motor, made a few years ago, in which the valves were in line and the offset was taken care of in the valve chambers, one of which was wider than the other by the amount of the offset between the cylinders. It was necessary in those motors to reduce the compression space considerably to balance the greater offset before the motor would give good power.

## WRITE THE A. M. L.

Providence, R. I.—Editor Motor Age—How can I secure a copy of "Roadside Troubles"?—E. H.

Write the secretary of the American Motor League, Vanderbilt building, New York city.



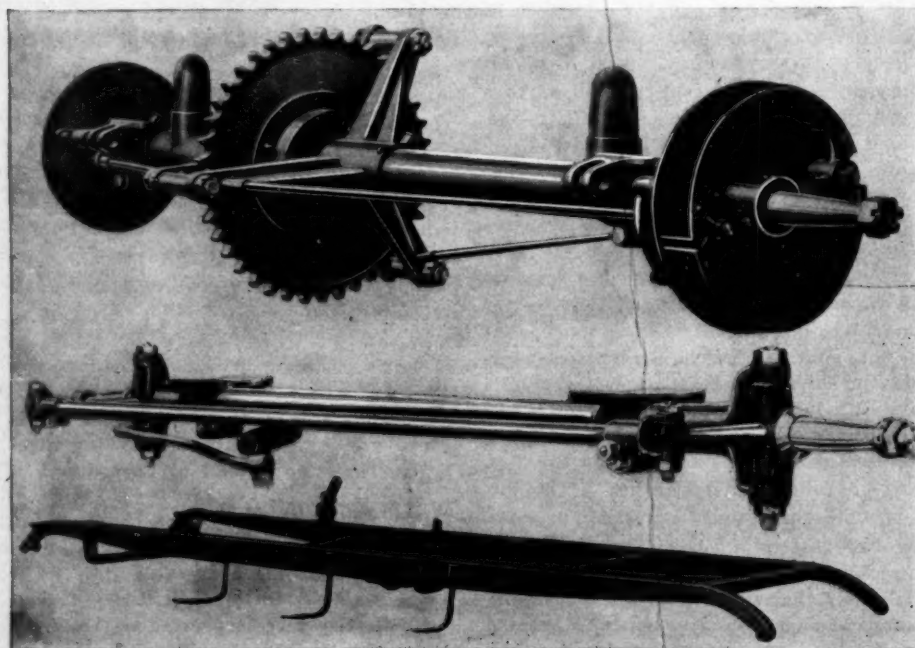
POWER AND TRANSMISSION PLANT OF CARTERCAR, SHOWING FRICTION DISK AND WHEEL

"**20** UR car for 1907 is practically as it was last season—that is, all the principles involved have been retained without change, but of course we have made such slight alterations as increasing horsepower, lengthening wheelbase, lengthening springs, increasing frame strength, adding a couple of more leads to the oiler, using a tubular front axle instead of an I-beam type, carrying front wheels on ball instead of roller bearings, using a knife blade timer instead of roller style, increasing the length of the hood 2 inches, giving 2 inches additional foot room for the front seat passengers and expanding the rear hub brakes by toggle joint instead of cam." This direct quotation is the sum total of alterations that Byron T. Carter, inventor of the Cartercar and leading spirit in the Motorcar Co., De-

troit, Mich., has deemed necessary in his Cartercar for this season. The fact that the friction transmission system remains unchanged and that the two-cylinder opposed motor placed crosswise under the hood has not been altered except by increasing the cylinder bore from  $5\frac{1}{4}$  to  $5\frac{1}{2}$  inches, thereby increasing the cylinder rating from 18 to 20 to 20-24 horsepower, is considered proof that the 1906 car made good. The general design of the Cartercar, as many readers of Motor Age are familiar, is conventional throughout in that the crankshaft is continued in the form of an intermediate shaft to the center of the chassis where it carries a large friction disk. Immediately in the rear of this disk is a cross shaft on which is mounted a sliding friction wheel, working on a long key and contacting with the face of the friction disk. Communication between this cross shaft and the rear axle

assumes the form of a single roller chain.

The interesting problem in the Cartercar is the friction transmission for the general conception of which the reader's attention is invited to the illustration on the head of this page. Analyzing this illustration from left to right, the reader will note the two-cylinder motor with its six-feed oiler on top; then comes the fan-blade flywheel, followed by a shaft termed the disk shaft and on the rear of which is a large 22-inch aluminum alloy friction disk. To the rear of this is a cross shaft, already referred to, with its 22-inch friction wheel adapted to slide across the face of the friction disk and for which movement the long lever in the background is required. In friction transmission a variety of design is always evident in the method of pressing the friction wheel against the face of the friction disk. Readers will realize that the friction wheel must be held very firmly against the disk in order to avoid slipping. Some makers accomplish this contact by swinging the cross shaft forward, which is done by mounting it in swivel bearings. In the Cartercar, however, a different course is pursued in that the large friction disk is forced backwards against the friction wheel, the movement being accomplished by the left pedal which is ratchet-retained so any degree of contact can be held. When this friction disk is moved backwards the disk shaft coupling with the flywheel is carried backwards. To do this and not carry the flywheel and motor backwards, a unique connection between the forward end of the disk shaft and the flywheel is made use of. On the forward end of this shaft is a three-arm spider with arms  $7\frac{1}{2}$  inches long at 120 degrees to one another. The outer ends of these arms are expanded, forming eye holes fitted with fiber bushings. Into the flywheel are threaded three bolts and these bolts receive the arms of the spider. The bolts are of sufficient length so with the disk shaft pulled to its extreme rear the spider arms are not to the end of them. Looking

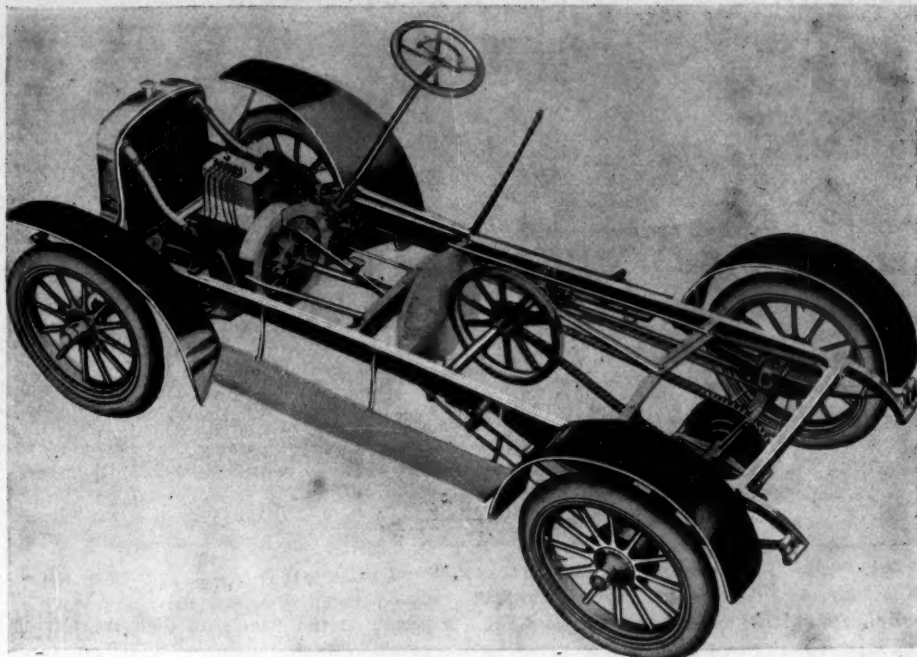


REAR AXLE, FRONT AXLE AND FRAME OF CARTERCAR



more closely at the friction disk and friction wheel, it is noted the former is a special aluminum alloy, the exact nature of which has not been divulged by the inventor. On the forward face of the disk is a series of heavy radial webs to resist springing when driving on high speed, at which time the friction wheel is pressing upon the outside of the disk, as shown in the illustration. On all forward speeds the friction wheel contacts with the left half of the disk and on the reverse it is moved past the center and into the contact with the right portion, at which time the long lever at the right is pulled to its rear position. The friction wheel, equal in diameter to the friction disk—22 inches—has its periphery formed of fiber or paper board, the exact composition of which is a feature of the makers. This fiber surface is 1½ inches wide and has a wearing depth of ¼ inch. It is held in position much as a solid tire is secured on the rim of a wheel. On one side the wheel is a permanent flange and on the other a removable flange, between which the fiber is clamped.

Readers will appreciate that when the friction disk is thrust backward upon the friction wheel there will be a tendency for the cross shaft to bend backwards slightly, which will especially be the case when the friction wheel is near the center of the shaft, in which position it will be on slow forward and reverse speeds. The maker has anticipated this condition by mounting the American roller bearings supporting the ends of this shaft in spherical bushings so with the shaft being slightly out of line in the center it still has a perfect bearing in the roller races. On the cross shaft is the small sprocket for final drive. The apparent advantage of this friction system is that the cross shaft always is in the same relative position to the rear axle so that there is no forward or backward movement of this axle. An interlocker scheme is provided,

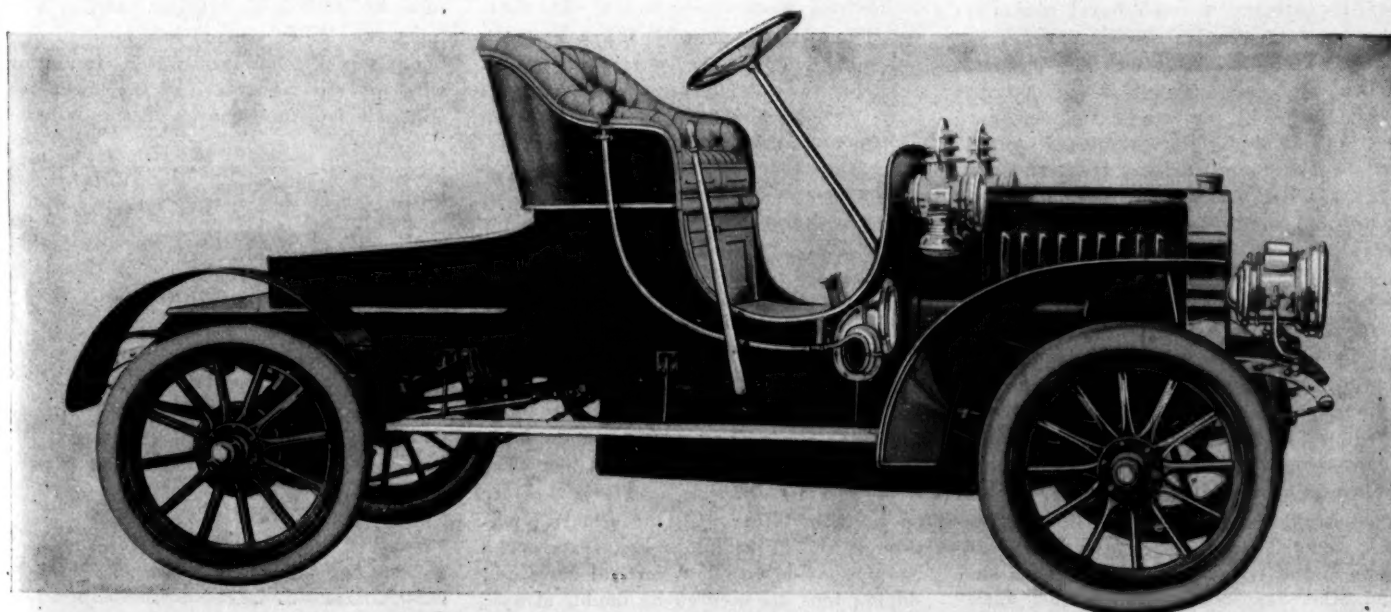


CARTECAR CHASSIS WITH SINGLE CHAIN DRIVE AND STEEL FRAME

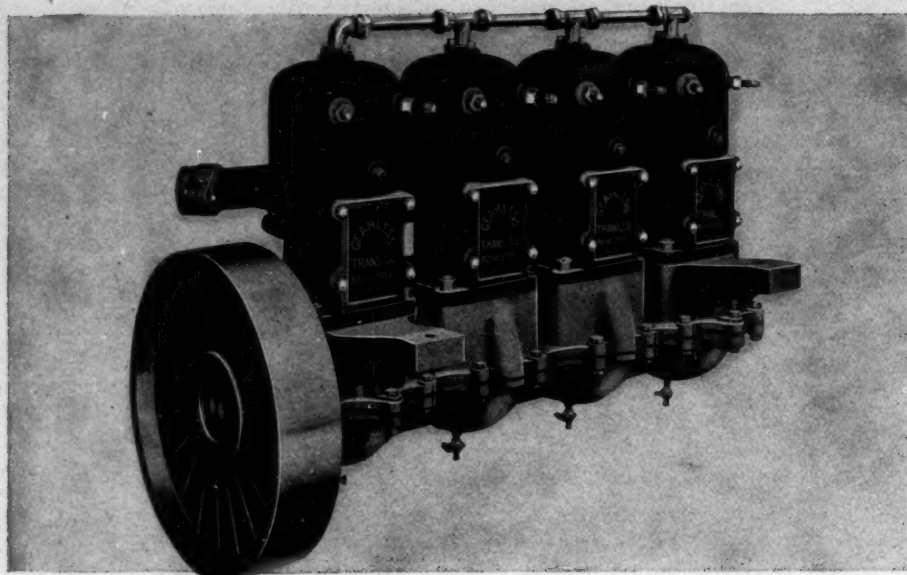
making it impossible to slide the friction wheel on the cross shaft until the disk has been pulled forward out of engagement by means of a small spring. At the front of the friction disk is a large ball end thrust bearing consisting of thirteen ¾-inch balls carried in a race 4½ inches in diameter. Attention is directed to the fact that by forcing back upon the disk through this ball race there is no possible end thrust placed upon the motor nor is there any end thrust when the disk is pulled forward out of engagement by its spring. The disk shaft at this point has a long Parsons white bronze bearing in an arched crosspiece of the frame.

In a passing consideration of the motor it should be borne in mind that the crankcase is divided vertically and has the right half formed integrally with the right cylinder and the left half with the left

cylinder, the appearance of the crankcase from in front being spherical except for the cubical oil reservoir, which is formed integrally with the covering for the top of the crankcase and between which and the case proper are carried the push rods for opening the intake and exhaust valves as well as the gear-driven camshaft. The timer is mounted on the top of a vertical shaft and is seen above the oiler top. It is driven by worm and gear off the camshaft. The Lavigne oiler is driven by spur gear from the forward end of the camshaft, the gear being entirely enclosed. This year the oiler has six leads together with bleeder tests on the top. Two leads connect with the cylinders, two with the connecting rods and two with the Parsons white bronze bearings of the crankshaft. Mixture is supplied through a Universal carbureter carried in front of the right



SIDE VIEW OF CARTECAR ROADSTER OR RUNABOUT WITH FRICTION TRANSMISSION



FOUR-CYLINDER, TWO-CYCLE MOTOR OF GEARLESS CAR

cylinder; valves are removable through threaded openings in the outer ends of the valve ports; plugs are carried angularly in the front corners of the valve ports close to the intake valves; cooling is by thermo-syphon principles with tubular radiator; cylinders, rings and pistons are finished by grinding, and spark and throttle control are from levers carried on a stationary semi-circle above the steering wheel center.

In the running gear of this machine a pressed steel framework is used, the vertical depth of the side pieces of which has been increased from 3 to  $3\frac{1}{2}$  inches. The forward axle is now a tubular piece straight from end to end and fitted with Elliott type steering knuckles with the tie rod in rear. The rear axle, supported on Hyatt rollers, has  $1\frac{1}{4}$ -inch drive shafts and Brown-Lipe differential with end thrust bearings. The expanding brakes are lined with camel's hair and adjustable, their application being by the right pedal. Steering is through gear and sector, there being a small bevel pinion on the base of the steering column and a toothed sector meshing with it; neither of which are enclosed but are lubricated occasionally by an application of hard grease. Semi-elliptic springs, 42 and 48 inches long respectively in front and rear, are 2 inches longer than last season; the wheelbase now measures 96 inches; the hood is made 2 inches longer as a matter of appearance and tires are still 30 by  $3\frac{1}{2}$  inches in size.

Cartercars are manufactured in five models, A, C, D, E and F. A is the five-passenger touring car with fixed tonneau; C a delivery wagon; D a two-passenger runabout with torpedo deck; E a two and four-passenger vehicle provided with an Artz folding tonneau; and F is a two and five-passenger car supplied with a detachable tonneau. All cars have identically same motor, wheelbase, tires, transmission and other features. Although just entering upon its second year of active com-

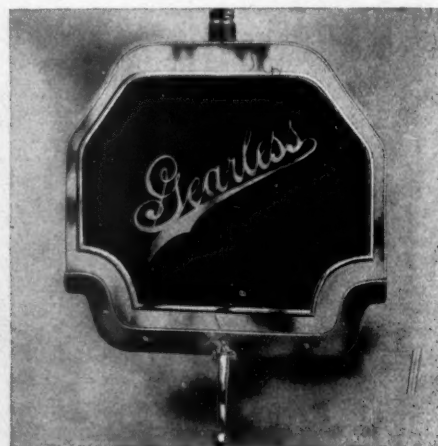
petition in the American field the Cartercar has already made a most favorable impression directly because of the work done by it not only in its home state but throughout the country. The friction combination on which so much is staked has shown great wearing qualities, one car having covered over 5,000 miles without showing wear.

#### BRACE OF GEARLESS CARS

One of the most interesting announcements of the present month in the motor car industry is that coming from the Gearless Transmission Co., Rochester, N. Y., mentioning its placing on the market two styles of motor cars in which is fitted its well-known type of gearless transmission. Not the least important in this announcement is the information that one of these machines is a 60-horsepower four-cylinder engine with 5 by 5-inch cylinders operating on the two-cycle principle and the other a 75-horsepower, six-cylinder four-cycle engine with cylinder bore 4 13-16 inches and stroke of  $5\frac{1}{2}$  inches. The four-cylinder car is made with 124-inch wheelbase and 36-inch wheels, carrying 4-inch tires and the six-cylinder car has a wheelbase measuring 128 inches with 36-inch wheels and  $4\frac{1}{2}$ -inch tires. The four-cylinder car is designed especially for five-passenger service, although there is a tonneau accommodation for two auxiliary seats. The six-cylinder machine is a regular seven-passenger vehicle, the tonneau being provided with a couple of Pullman revolving chairs of the same style as used in several makes of cars this season. As seen in the illustrations, both bodies are patterned along straight lines and have exceedingly low front seats with the back of the rear seats but slightly higher. The tonneau doors are wide and their tops are on a straight line with the arm rest portion of the front and rear seats. The bonnets made with low vertical sides and sloping tops are secured by double straps; the dash forms an expanded continuation

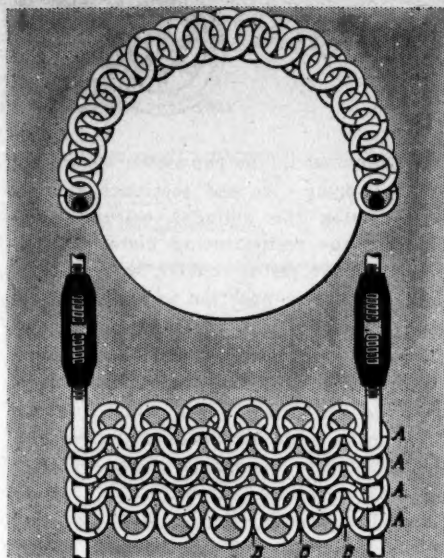
of this bonnet and is continued rearward along the ends of the footboard; the steering column is well inclined, entering the dash close to the top and the two operating levers at the right side when neutral occupy a vertical position slightly in advance of the front end of the seat. The running boards at the front are continued into fenders which follow the curvature of the wheel to the top, then extend horizontally for a distance. These fenders, as well as those on the rear, are devoid of plowshare effect.

The particular design of two-cycle motor used in these 60-horsepower cars follows that conventional three-port design in which separately cast cylinders are in vogue, these cylinders having openings at the left side for the exhaust as well as others near their base for the intake of mixture to the crankcase. On the right side are seen large nameplates which form the covering or outer wall for the bypass channels through which the mixture passes from the crankcase to the cylinders above the pistons. The crankcase is a two-part construction, the upper one resembling four box-like compartments on each of which is carried a cylinder. The lower part has four semi-spherical expansions, one beneath each throw of the crankshaft. This irregular crankcase construction is required in order to increase the crankcase compression sufficiently to insure a good charge of gas being forced from the crankcase into the combustion chamber on each downward stroke of the piston. In this—as in most other two-cycle crankcases—the portion of the case beneath each cylinder is gas-tight and nearly all space is taken up by the crank throw and the lower end of the connecting rod. The entire motor is suspended through four lateral arms, two on each side, one at the front and one at the rear, and each appearing as a continuation of the end portions of the crankcase on which rest the first and fourth cylinders. Each cylinder is an integral casting, having walls, water jackets and head in one. Cooling is by standard water circulation with the water entrance at the lower left and exit from the center of the cylinder



RADIATOR OF GEARLESS CAR





GAYLOR METAL TIRE ARMOR

heads. A double spark plug system is fitted, one set receiving its current from storage battery and the other from magneto. Instead of carrying the plugs in the cylinder heads, a common practice in America and abroad, they are mounted on the side of the cylinder walls where they are close to the top of the piston when it is at the upper end of the stroke and the makers claim that by so placing them the mixture is more quickly ignited and the effectiveness of the explosion transmitted to the piston earlier than where the explosion begins in the crown of the combustion chamber and is transmitted through the mixture to the head of the piston.

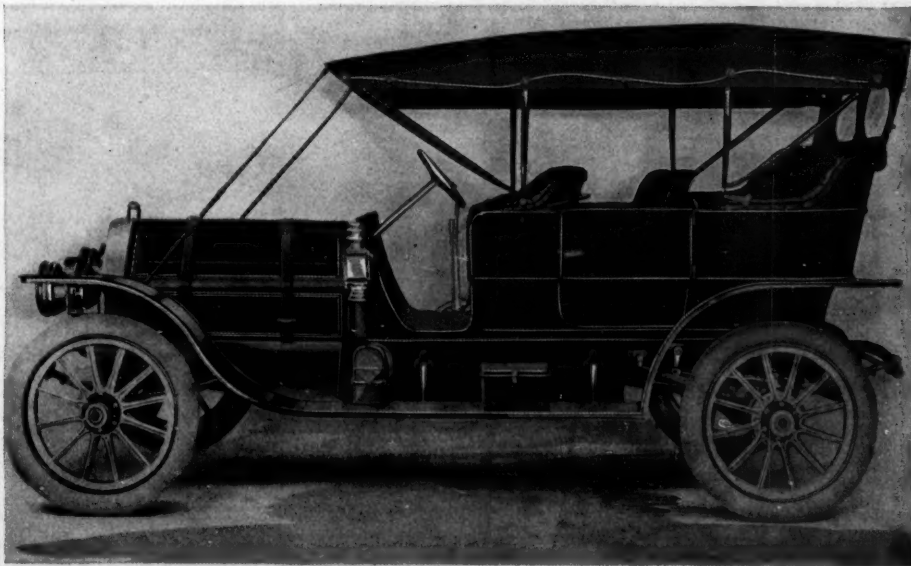
The transmission system employed in both of these cars is, as has already been stated, one brought out by the company some time ago and which has been well tried out throughout the country on pleasure and commercial cars. It is a friction system of transmission but differs from all others in that on direct drive all friction elements are out of commission and when the drive is through an expanding clutch in the flywheel direct, by propeller shaft to the bevel gears on the rear axles. With the ordinary motor a car is driven 90 per cent of the time on the high speed and so with this gearless transmission on high speed the drive is identical with that on a car fitted with sliding gear set, except that no gears have to be revolved. For all other forward variations and reverse a set of two friction disks and one friction wheel is required. The two friction disks are mounted in the rear of and at right angles to the flywheel so that their peripheries can be contacted with the rear face of the flywheel. On the propeller shaft between these disks is mounted a sliding friction wheel keyed to the propeller shaft and of such diameter that its periphery will contact with the inner face of the two friction disks. This friction wheel is thus driven at two points diametrically opposite to each other, one

point where it contacts with the right disk and the other where it contacts with the left disk. By using two friction disks, both contacting with opposite sides of the flywheel, all possible side strains on the crankshaft are avoided. For forward variations in speed the friction wheel on the propeller shaft is made to contact with the forward half of the friction disks and in reversing with the rear half of these disks. In the four-cycle, six-cylinder car the valves are carried in side ports, the motor finds support on a sub-frame, a double ignition system is installed, oil flow is by gear-driven pump. Cooling is along recognized lines and motor control is through spark and throttle. The car complete weighs 3,000 pounds. Like the four-cylinder machine its friction transmission gives two forward and one reverse speeds, braking is through the transmission brake and two on each rear hubs, steering is through a worm and nut gear, shaft drive is employed and a pressed steel construction is used in the frame.

#### NEW TYPE OF TIRE ARMOR

Leonard B. Gaylor, 191 Huntington avenue, Boston, is the inventor of the Gaylor tire armor illustrated herewith and which consists of a close-meshed fabric of steel links surrounding and enclosing the entire tread and face of the tire and extending over the tire on each side nearly to the rim. A steel wire  $\frac{1}{4}$ -inch in diameter passes through the outer row of links on each side. The ends of this wire are attached together through a right and left turnbuckle by means of which the armor is partially held in place, the air pressure within the tire assisting in its retention. The illustration shows a cross section of a  $4\frac{1}{2}$ -inch tire with the upper half covered by the armor. In the lower illustration is shown a part of the armor as if laid on the top of a table. At either side appears the  $\frac{1}{4}$ -inch retaining wire with its turnbuckle and between these

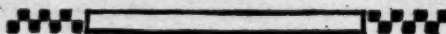
wires stretches the armor, composed of circles of steel, each ring of  $\frac{1}{4}$ -inch internal diameter and with a ring part 3-32-inch wide. These rings are arranged in two series of rows between the retaining wires one set of rows marked A having the end links passing around the wire and requiring eleven rings; alternating with these rows are other rows B of ten rings to the row and not connected with the retaining wires. The rows B interlace with the adjacent rings in the rows A at either side. Thus each ring in a B row interlaces with four rings in the A rows. For different sizes of tires, the size of the links are so calculated that when put together they will form a U-shaped shoe conforming closely with the shape of the tire for which it is intended. The shoe is put in place when the tire is deflated and the inner dimensions of the tire shoe are such that when the tire is again inflated the linked steel shoe will be held in place by the air pressure. The maker intends that the armor shall be enough smaller than the face of the tire shoe that it will take at least two-thirds of the air pressure, thus freeing the rubber shoe of the strain occasioned by such. The exact amount of strain that the armor takes can be regulated by the adjustment of the turnbuckles. Besides forming an anti-slip protection the maker asserts that the armor prevents puncturing to a very great extent, that it interferes but slightly with the general resiliency of the tire and that the added weight is evenly distributed over the tire tread. With a car fitted with these armors on all four wheels a clumsy effect is not produced due to the tight fit of the cover. On many chains fitting loosely an irregular motion is given the chains with the car traveling rapidly. Besides this the armor covering the entire tire surface, prevents wear on the tire shoe and also prevents practically every possibility of puncture. With this cover no attaching lugs coupling with the wheel spokes are needed for any wheel.



SIX-CYLINDER FOUR-CYCLE GEARLESS SEVEN-PASSENGER CAR



# DEVELOPMENT BRIEFS



## EVER-READY DUAL CARBURETER

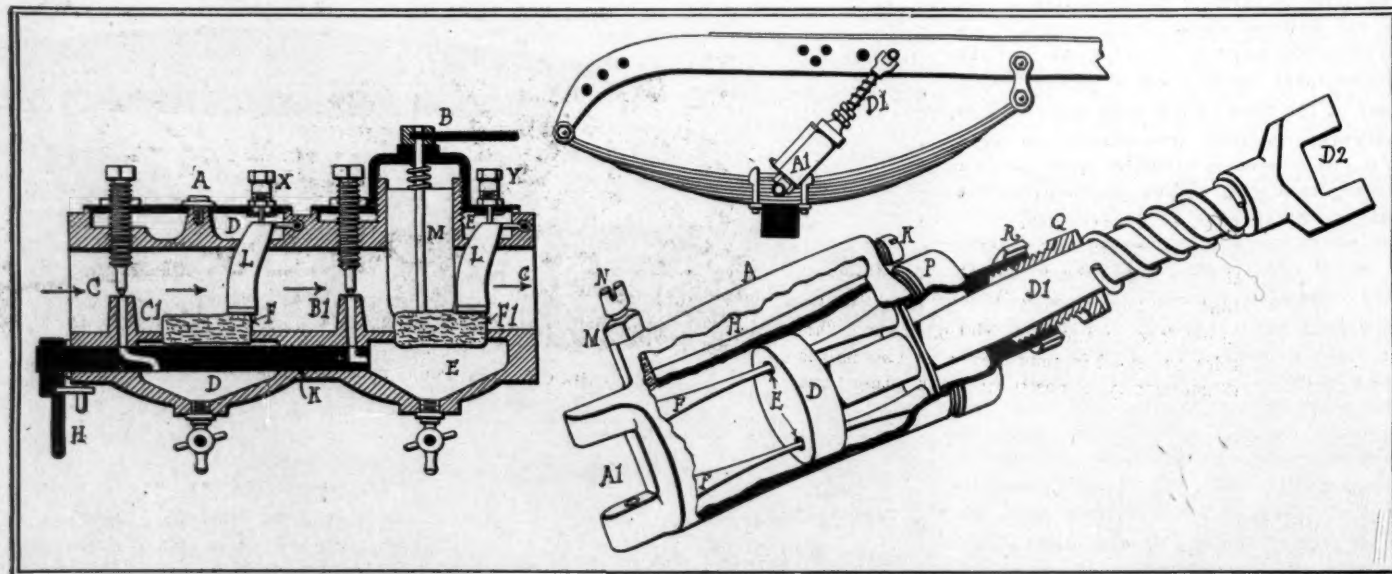
The Ever-Ready carbureter is a double one, a part being for volatilizing a special grade of naphtha for starting the engine and the other carbureter being for the use of gasoline or other fuel on which the car is to run. Although made in apparently one piece, the carbureter is to all intents and purposes a dual one for the above mentioned purposes and has two float chambers, two spraying nozzles, one throttle and one mixing chamber. The left half of the carbureter marked A is the naphtha portion, used for starting, and the right half B is the regular part. Naphtha enters by way of the opening X and gasoline or other fuels through the opening Y. C marks the long horizontal cylindrical mixing chamber, through which the air passes as indicated by the arrows, there being connection at the right end with the intake pipes to the cylinders. The gasoline nozzle marked B1 and the naphtha nozzle marked C1 are both short vertical standpipes in the base of the mixing chamber and are guarded by needle valves carried in the top of the carbureter and extending into the mouth of the stand pipes. The spaces DD represent the chamber or float compartment in which the naphtha is contained, and EE that compartment or float chamber for housing the gasoline. F and F1 are the respective naphtha and gasoline floats. The float chambers thus are a ring space surrounding the horizontal cylindrical mixing chamber C. The floats are constructed of two pieces of cork fastened to a piece of aluminum L made in inverted U shape, this aluminum circling over the top of the air chamber so that the float pieces can rest in the lower portion of the float chamber as shown. A peculiar slide valve

K guards the opening to the nozzles C1 and B1 so that by moving it through the medium of the lever H it is possible to shut off either of the spraying nozzles. In starting the naphtha nozzle is opened, permitting of quick volatilization of the naphtha and immediately starting at which time the gasoline nozzle is also opened, but a further movement to the left of the valve K will shut off the naphtha nozzle and leave the gasoline one open. But one throttle is provided, that being a vertical one M. This throttle controls the carbureter for the naphtha fuel as well as the gasoline, due to the fact that the nozzles for both of these fuels are at the left of this throttle. Although this carbureter is a double one its design permits of both being housed in a very compact aluminum case supplied with brass fittings. This carbureter, like many other Ever-Ready specialties, like self-starter, tool-kit and others, is manufactured by the American Electrical Novelty Co., New York city.

## GRADUATING SHOCK ABSORBER

The Victor Shock Absorber Co., 1773 Broadway, New York city, has introduced a new graduating feature into its hydraulic shock absorber which is claimed to give a gradual decrease in the absorption of the shock throughout the complete period of spring flexion. How this is accomplished can be best understood by a brief analysis of the sectional illustration of the absorber. Before beginning this analysis attention is directed to the method of attaching the device, the end of the piston rod D1 being universally coupled to the car frame and the cylinder end A1 similarly attached to the spring. This is the case when semi-elliptics are used, but with full elliptics the top end of

the piston would be connected to the top of the spring. In the sectional drawing A indicates the cylinder, within which operates the reciprocating piston D, supported on the piston rod D1, with its yoke ending D2 for connection to the car frame. In the piston D are two holes E of equal diameter and placed diametrically opposite to each other. Through these holes pass the graduated rods F which rods are at opposite ends attached to plates equal in diameter to the inside of the cylinder, and which plates normally rest against the cylinder ends, thus making the rods F practically of the same length as the cylinder. As noted the rods F are of large diameter at the ends but gradually taper towards the center. The entire inner space of cylinder A is filled with a fluid, a part of which is contained in a bypass receptacle H, through which it is entered by a filling opening secured by the screw K. N is an adjusting screw for regulating the flow of liquid through this bypass and M is a lock nut for retaining any adjustment. The right end of the cylinder is secured by the piston cap P, which has packing Q and lock nut R. The operation of the device is as follows: On the car dropping into a hole the frame closes down upon the spring, forcing the piston D towards the lower end of the cylinder A. The first part of this movement is fairly free, for with the piston in the position shown the graduated rods F do not fill the entire holes E, this allowing of free passage of the fluid into the part of the cylinder above the piston D. As the piston approaches the lower end of the cylinder, the graduated rods F practically fill the holes E, thus restricting the escape of the liquid and using it as a cushion upon which the piston bears.

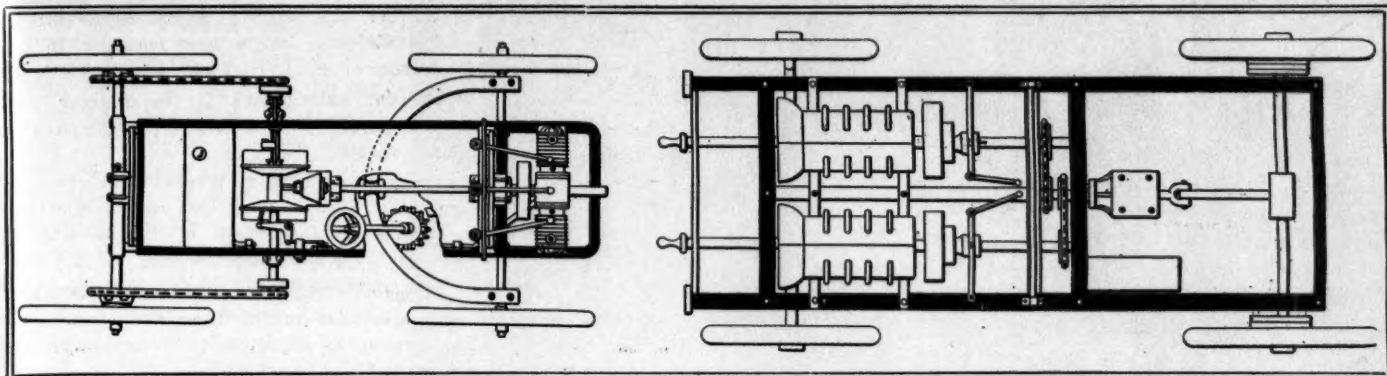


EVER-READY COMBINATION CARBURETER

SECTIONAL VIEW OF VICTOR HYDRAULIC SHOCK ABSORBER



# CURRENT MOTOR CAR PATENTS



TEMPLE'S CONICAL FRICTION TRANSMISSION

CARTER'S DUAL MOTOR IN CAR

**Friction Transmission**—No. 845,983, dated March 5; to E. Temple, Springfield, O.—Combined in this patent are two features, first a peculiar frame construction and second a friction transmission. The frame feature consists of sufficiently dropping the forward end of the main frame to carry the motor, giving the top of the motor a carriage on a level with the top of the remainder of the frame. The second phase of the patent, that of the friction transmission, consists in carrying a conical friction wheel on the end of the propeller shaft and carrying two larger conical pinions on a cross shaft immediately in rear of the smaller cone. The latter two cones are slidably mounted on their shafts so that when the cone on the propeller shaft is carried to the rear, either the right or left cone, on the cross shaft, may be brought into action. Drive from the cross shaft to the rear wheels is by side chains.

**Dual Motor**—No. 845,850, dated March 5; to H. O. Carter, Detroit, Mich.—In the front of the car frame are two motors with vertical cylinders, one mounted longitudinally in the left part of the frame and the other similarly mounted in the right half. On the rear end of each crankshaft is a cone clutch operative by pedal. Extending rearward from each clutch is an intermediate drive shaft reaching past the middle of the frame. Extending longitudinally from the center of the frame rearward and located between the intermediate shafts is a central propeller shaft with change speed gear box. The intermediate shafts are connected with the propeller shafts by gearing or chains. Both motors can be used simultaneously or one at a time, the control of them being reposed in the driver.

**Two-cycle Motor**—No. 846,004, dated March 5; to C. H. Brooks, Detroit, Mich.—In this two-cycle engine four vertical cylinders are bolted to the top of an airtight crankcase which is divided into halves, one for the two forward cylinders and the other for the rear pair. The pis-

tons in the two forward cylinders work in unison, traveling on the up stroke together and also on the down stroke. The pistons in the rear two cylinders work in unison but are always traveling in an opposite direction to those in the front pair. In the top of each piston is an automatic valve for admitting mixture, which enters the base of each half of the crankcase by a poppet valve. In the piston heads are mechanically controlled exhaust valves timed to open in a fixed relative position with the pistons.

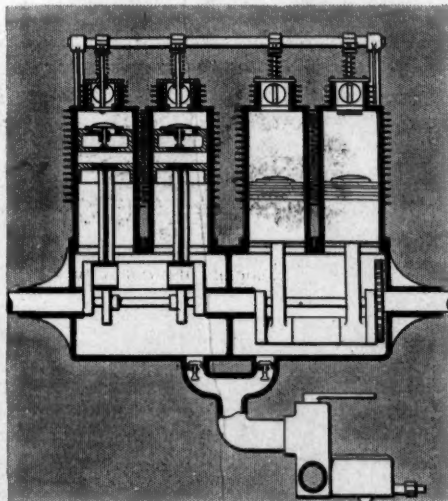
**Chain Cover**—No. 845,814, dated March 5; to O. Pfander, Brussels, Bel.—In cars with side chain drive the chain housing is supported on the radius rod, which at its forward end is revolubly mounted on the jackshaft and at its rear end is similarly mounted on the car axle. The forward end of the radius rod and also the rear end are expanded into a circular form of greater diameter than the sprockets for the chain transmission and the casing part is supported on these circular parts.

**Detachable Covered Bodies**—No. 845,844, dated March 5; to W. N. Becher, Chicago.—The detachable covered body referred to herein is intended to attach to a car body already having a front seat

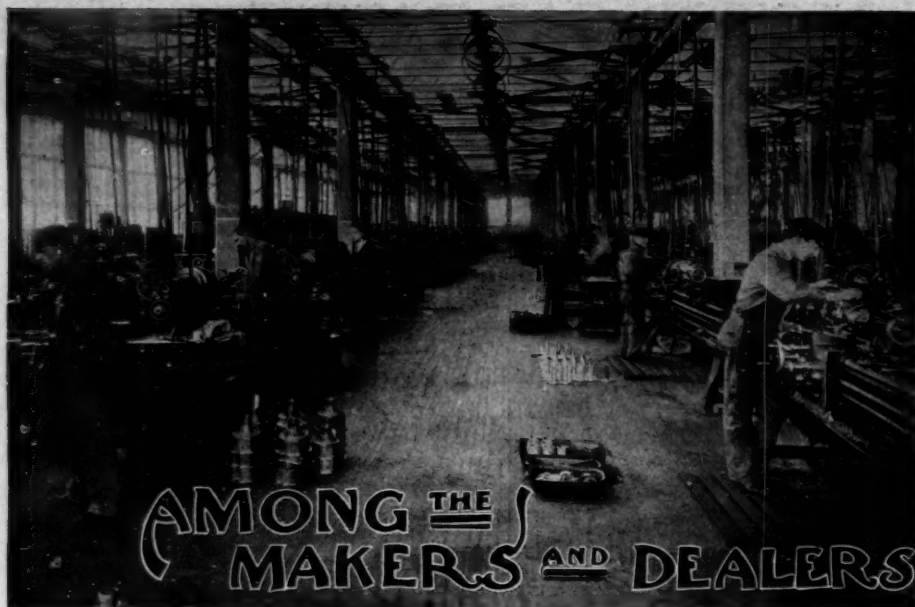
and a rear portion. The enclosed part consists of a covered rear portion, a glass front for dropping in the plane above the dash and a vertical partition rising above the back of the front seat. The top of the enclosure is supported on vertical pillars which rest upon the rear corners of the front seat. Access is by side entrances.

**Marmon frame**—No. 12,609, February 12; to J. Warrington and H. C. Marmon, Indianapolis, Ind.—This patent refers to the peculiar style of running gear used on Marmon cars, in which two frames are used, one supporting the body, the other carrying the machinery. Each frame is hung on a three-point suspension, two points at one end and one point in the center of the opposite end. The frame carrying the body has two-point suspension in the rear, carried on the springs, and one in the front and the frame carrying the machinery has a two-point support in front and a single point in the rear. The rear support of the machinery frame is direct on the rear axle and is the only support on the car in which springs do not interpose between it and the axles.

**Staggard Road Wheels**—No. 844,615, February 19; to I. E. Palmer, Middletown, Conn.—In vehicles intended for heavy freight transportation and which travel over rough roads a provision is made to relieve the jar by having one of the rear wheels further back than the other and having a similar arrangement for the two front wheels. With a truck of this kind, if a transverse ridge of the road were encountered the left front wheel would pass over it first then the right front followed by the right rear and the left rear. This arrangement means that the wheelbase on the right side of the car is considerably less than that on the left side. The inventor accomplishes this staggering of the front wheels by using a bent front axle and in the case of the rear wheels which are chain-driven he uses short axles and places that on the right side forward of that on the left. The usual steering arrangements suffice.



BROOKS' TWO-CYCLE MOTOR



SECTION OF MACHINE SHOP IN NEW PIERCE FACTORY

**Bennett on Board**—E. H. Cutler, resigned, has been succeeded by G. W. Bennett as a member of the executive committee of the N. A. A. M.

**Another Factory Enlarging**—Plans have been drawn up for an addition to the plant of the Locomobile company at Bridgeport, Conn. The new factory will be a four-story brick structure 40 by 150 feet.

**Peerless Capacity**—The Peerless Motor Car Co. reached a maximum output last week of twenty-eight cars for the week. An increase in output of over 50 per cent is expected for the year 1907 as compared with 1906. New buildings were erected during the fall and by the rearrangement and installation of additional machinery, the output has been brought up to four to six cars a day.

**New Electrical Concern**—The Willyoung Appliance Co., of Yonkers, N. Y., is a New York corporation with a capital of \$125,000, which has taken a factory at Yonkers, where it will manufacture coils, magnetos, spark plugs, speedometers, odometers and similar accessories for motor vehicles and motor boats. The president and general manager is Elmer G. Willyoung. Associated with Mr. Willyoung will be Benjamin Briscoe, J. D. Maxwell, Jerome Bradley, R. A. Paterson, and a number of other men prominent in motor manufacture.

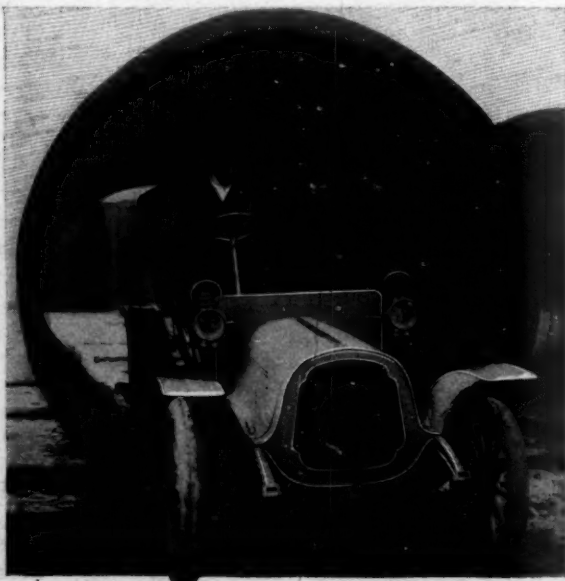
**Hearsey Makes Changes**—The H. T. Hearsey Vehicle Co., of Indianapolis, one of the pioneer vehicle dealers in Indiana, is making extensive alterations to accommodate its growing business. The first floor is to be devoted to a motor display room and the offices, the latter to be to one side. Plaster cast decorations used at the Chicago show have been purchased and these will form a dividing grill between the show

room and offices and sundry rooms. In the future horse-drawn vehicles will be shown on the second floor.

**Fire Protection**—The Standard Fire Extinguisher Co., of Cincinnati, O., has closed a contract to install a complete sprinkler system in the De Luxe factory.

**New Firestone Branch**—The Firestone Tire and Rubber Co. has opened a Pittsburgh branch at 5904 Penn avenue, where a complete stock of solid and pneumatic tires will be kept. A large repair shop will be fitted up soon.

**Branch Discontinued**—The Cleveland branch of the Aerocar company, maintained on Euclid avenue, Cleveland, since last fall, has been discontinued and the local agency for the car has been placed in the hands of the American Auto Co., which has opened a large two-story garage at the corner of Ontario street and St. Clair avenue, within a stone's throw of the public square, that city. In addition



AEROCAR DRIVING THROUGH SMOKE STACK

to pushing the Aerocar, the company will conduct a general garage business. C. C. Sigler is president and A. D. Brown secretary of the new company.

**New Tire Manager**—The Pennsylvania Rubber Co., at 615 North Broad street, Philadelphia, has a new manager in the person of R. J. Pickton, who, with P. C. Dolton, well known to the quakers, will look after the interests of the company in the future.

**Becker Injured in Wreck**—J. H. Becker, of the Elmore Mfg. Co., was one of the injured in the wreck of the New York Central near Poughkeepsie, N. Y. The lobe of his right ear was slightly torn and one shoulder and his back wrenched. However, he is reported to be rapidly convalescing.

**Will Make Sevison Sparker**—The Constantine Mfg. Co., organized by Charles Cohn, Constantine; C. E. Fousel, Centerville; Luther Sevison, Port Huron, and D. L. Chipman, of Peoria, Ill., has taken over the plant of the Tweedale Foundry and Machine Shop, with water power, at Constantine, Mich. The new company will manufacture the Sevison sparker for gas engines. The company has also under consideration the manufacture of several other articles in the electric line.

**Mitchell Activity**—Work has been completed on the new concrete addition to the regular plant of the Mitchell Motor Car Co., of Racine, Wis., which will give the company an extra space 100 by 230 feet. The company also contemplates still another building twice the size of the one just finished. This will be ready for occupancy August 1. Another prospective addition is an office building which will be ready for occupancy the same time. All buildings will be of fireproof concrete construction.

**Hub Motorists Become Wise**—The Motor Car Storage and Trades Association is the name of a new organization formed in Boston. The objects of the association are to protect its members from any unjust legislation that may be brought up in the legislature and to arrange for more uniform rates for renting, hiring, storage and garage work in that city, something that has been talked of by the motorists for a long time. More than thirty owners and those interested in garage work gathered and talked matters over for a week before anything in the way of organizing was done. J. S. Hathaway, of the White company, was chosen president; J. H. MacAlman, of the Columbia, and Kenneth Blake, of the Locomobile, vice presidents, and C. F. Whitney, of the Park Square Auto Station, secretary and treasurer. The board of directors comprise the above and Henry Fosdick, of the Thomas; Frank Stranahan, of the Buick, and Everett Litchfield, of the motor



mart. The organization plans to help owners to get the best men possible for drivers and will protect motorists from excessive charges. It is planned also to wipe out the commission system.

#### Brooks Looking for Site—C. H.

Brooks, of Detroit, Mich., is trying to interest capitalists of Alpena, Mich., in a motor car factory which would manufacture the Brooks car, a new rig which is to be placed on the market this year.

#### Reeke in with Sollidays—Alfred

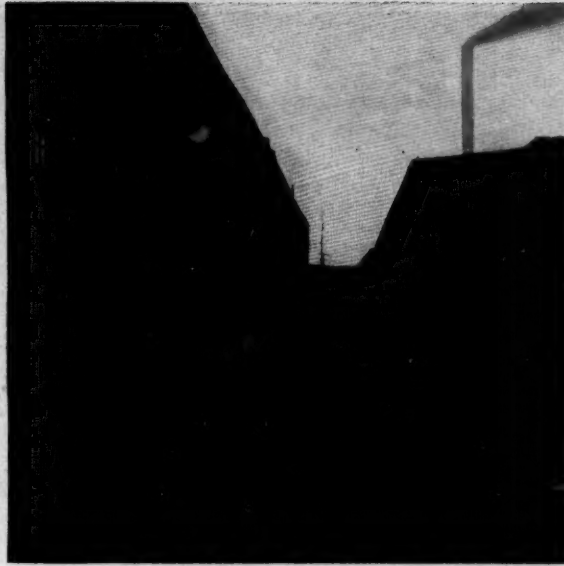
Reeke, late secretary and treasurer of the Orlando F. Weber Co., of Chicago, has joined forces with Solliday & Co., of Milwaukee, and the Solliday Motor Co., handling the Wayne for the state of Wisconsin, is the result. The capital stock of the new concern is \$50,000, already subscribed, and A. F. Solliday is president, A. Solliday vice-president and Alfred Reeke secretary. The concern will locate at Fourth and Prairie streets, the old location of Solliday & Co.

#### New Pierce Factory—A glimpse into

the new factory of the George N. Pierce Co., at Buffalo, which is now in full working order, furnishes ample explanation and justification of the pride taken in it by the firm. The fact that abundant light and elbow room are essentials to superior workmanship appears to have been a dominant thought of the designers, and an inspection of this model plant brings home a realization of what is meant when the Pierce Co. says that in "the factory behind the Great Arrow car" is the secret of its excellence. The accompanying photograph, shows only a portion of one of the scores of departments.

#### Big Garages for Pittsburgh—If Pittsburgh

is not coming to the front as a motor center then all signs are wrong. Two more projects are announced which will involve an outlay of \$200,000 or more each, and which will give Pittsburgh two of the largest garages in the United States. The Standard Automobile Co., which is located in a chain of buildings at Baum and Beatty streets, East End, has commissioned its architects to prepare plans for a reinforced concrete garage six stories high, which will be erected in Aiken avenue, East End. It will be 100 by 150 feet in size and fireproof throughout. Work will be started in April. The other project referred to is the purchase by H. H. Marks, of New York city, of the five-story brick building, 50 by 160 feet, formerly owned by the Oakland Livery Co. He pays \$90,000 for the property, which is located in Henry street, Oakland, convenient to the East End and all the boulevards. It is stated on good authority that the Rainier company is interested in the purchase through A. L. Richmond, Jr., owner of the Hotel Lincoln, of Pittsburgh, and that the building will be made over and



NATIONAL COMPANY'S SHIPPING PLATFORM

fully equipped for a big garage for the Rainier car and a general storage house.

**Credit Association Elects**—W. B. Lashar, of the Weed Chain Tire Grip Co., has been elected president of the Automobile Trade Association. Michael J. Martin, of the George A. Haws Co., has been made treasurer and Franz Neilson secretary.

**Haynes Joins Dragon Forces**—John W. Haynes, well known in the trade through his connection with his namesake company, has become sales manager of the A. L. Kull Automobile Co., New York, agent for the Wayne and the Dragon.

**Will Use a Manograph**—The B. L. M. Motor Car and Equipment Co. has opened in Brooklyn what will be known as the B. L. M. automobile engineering laboratories, where tests of all kinds in connection with motor cars will be made. It will be in charge of David Landau. There has just been received at the laboratory what is said to be the first four-cylinder manograph ever seen in this country. This is an affair for testing power and compression in cylinders under varying conditions. By the use of the manograph,

the power under varying speeds is secured. It supplies an indicator diagram of the gas engine.

**Back from South America**—J. B. Bartholomew, president of the Bartholomew Co., has just returned from a 3 months' tour of South America to establish agencies for the Glide.

**New Gopher Industry**—The Luverne Automobile Co. is preparing to erect a factory at Luverne, Minn. It will occupy a lot 40 by 75 feet and will be two stories high, with a full basement. The construction work will be carried on in the basement, the first floor will be used for a salesroom and the second for finishing purposes.

**Diamond Deal**—The purchase of a large majority of the stock of the Bryant Steel Wheel and Rim Co., of Columbus, O., by representa-

tives of the Diamond Rubber Co., has given the latter control of the wheel and rim concern. The Marsh rim, made by the Bryant company, has been controlled at all times by the Diamond Rubber Co., and the quick detachable tires of the Diamond company have been made expressly for this quick acting rim. The Diamond Rubber Co. will continue to furnish the Marsh rim, but now as owner instead of merely as selling agent.

**Drives Through a Smoke Stack**—It is an unusual occurrence for motorists to experience the sensation of a trip in a touring car through a smoke stack. This was the case in the yard of the Detroit Shipbuilding Co. recently, when four men in an Aerocar were driven through a section of one of the stacks for the new passenger steamer the City of Cleveland, which is under course of construction for the Detroit and Cleveland Navigation Co. When completed the stacks of the vessel will be 75 feet in length and they measure 8 feet 6 inches in diameter. The Aerocar ran through the inner casing of the stack and not through the outer shell.



PLANT OF EMPIRE AUTOMATIC TIRE CO. AT TRENTON, N. J.

# THE REALM OF THE



RENARD TRAIN OF FOUR FREIGHT CARS IN FRANCE DRIVEN BY 75-HORSEPOWER LOCOMOTOR



TWO weeks ago England witnessed the unique sight of a train of cars traveling on a city street and country road without the use of iron rails as used for railroad trains. France saw it 2 years ago. Spain was witness to a similar performance a season and a half ago; Persia has become accustomed to passenger trains of this type during the last couple of seasons; Servia, Bulgaria, Turkey, Germany, Italy, Russia, Argentine, Central Africa, Chili, Peru, Austria, Holland and other European nations already have grown accustomed to such sights. The novel train is known as the Renard road train and generally consists of four or five pleasure or freight cars headed by a steam or gasoline locomotor which does not pull the cars as does the steam locomotive on the railroad but rather each car propels itself which is accomplished by having a continuous driveshaft from the locomotor to all of the trailing vehicles and from which shaft a pair of wheels on each vehicle is driven through bevel gears and differential. The Renard train is the invention of Colonel Renard, a French army officer, who a few seasons ago was commissioned to investigate the field of motor transport for military purposes. The outcome of his efforts is the present Renard train which has proven its efficiency by its ability to travel over country roads at speeds from 5 to 30 miles per hour. Besides its unique feature of driving each machine, the next most important consideration is that in turning a corner each of the trailing carriages follows the tracks of the locomotor, a fact which enables the driver to make double S turns or meander through crowded city streets with the facility of a single motor vehicle. This decidedly interesting steering problem enables the train to reverse with as great ease as it travels ahead and one of the usual dem-

onstrations to show its ability in this regard is for the train to coil up snail fashion in some small yard and then back out again. Of interest equal to the driving and steering problems in the Renard train is that of using six wheels for each of the trailers, the center pair of wheels on each trailer being the drivers and the front and rear pair coming in for steering purposes at which time the forward pair turns in one direction and the rear pair in the opposite direction.

Although unknown to most Americans, the Renard train is no castle in the air or the impossible creation of some idle French dreamer. It is a reality. For two seasons it has shown its prowess in nearly a score of countries in the old world as well as one or two in the new. In Persia it has been used for passenger service over a regular scheduled course and makes its trips with a regularity not excelled by that of the modern steam train. In Spain its field has been that of transporting military supplies and in which role its performances have been equally creditable.

South America has witnessed its performance in the mining regions where it daily maneuvers mountain roads, ascending and descending stubborn grades to the surprise of the most enthusiastic. In Holland and Russia it operates on regular routes where its service is confined to the transportation of freight and baggage through localities wherein the construction of a steam line would not prove a profitable investment. In these cases it has operated for 18 months with commendable regularity, not having missed a trip summer or winter during that period. This list of performances could be enlarged upon but it is sufficient. As yet nothing has been done concerning its introduction into America but there is no reason it should not be well adapted to western conditions. England has shown its faith in the proposition by the Daimler company of Coventry, taking up the manufacture of it and in several other countries the sale of patent rights for its manufacture is under consideration.

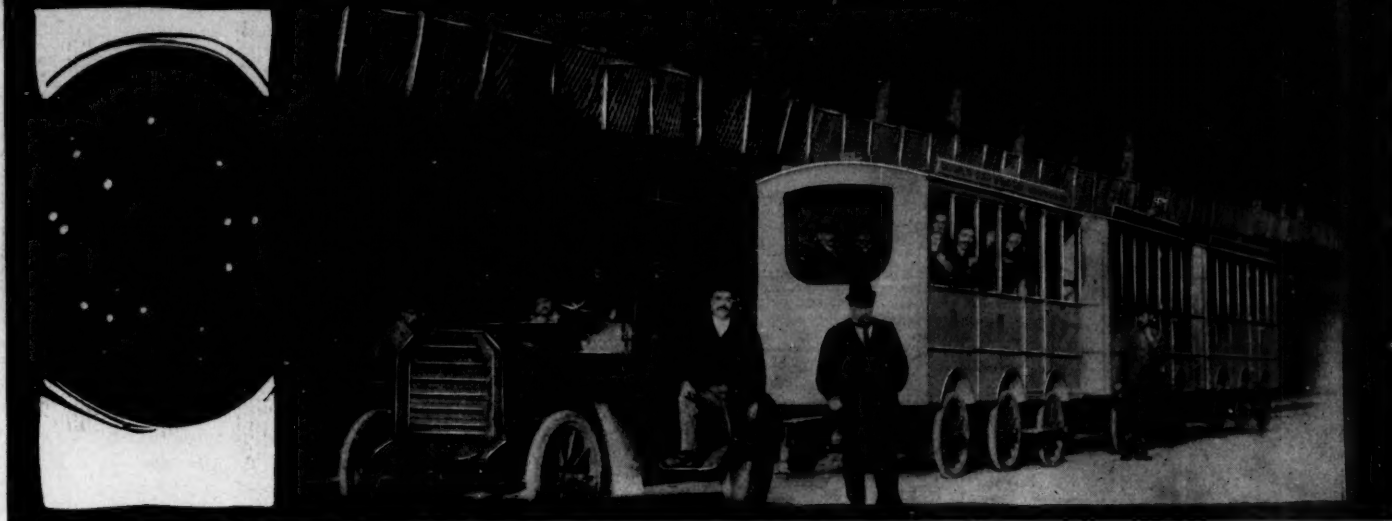
Before entering upon a detailed consid-



SEVENTY-FIVE-HORSEPOWER LOCOMOTOR FOR RENARD TRAIN



# COMMERCIAL CAR



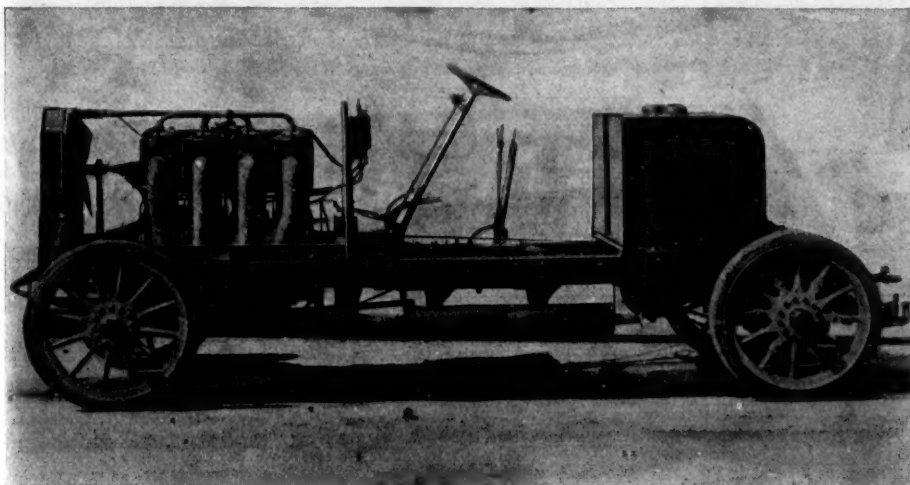
THREE-COACH RENARD TRAIN DOING REGULAR SCHEDULE SERVICE IN TURKEY

eration of the power transmission, steering and chassis construction of the locomotor and its trailers of the Renard, it will not be amiss to consider why the public should show interest in a train of this character. American citizens have not as yet had to wrestle with the problem of mechanical transportation for commercial uses as have the manufacturers of England, Scotland, France, Germany and many other old world nations. With us the traction engine for transporting loads along country roads practically is unknown—we only associate it with the pulling of plows on large western farms and the drawing of threshing machines from place to place. In England the traction engine pulling one or two trailers behind it is a common sight and is in use in scores of factories as well as other industries. Its use is possible because of the better roads and streets. With us it would be impossible to use these engines in many of our cities, and our rural roads would be available only a few months each year. Where traction engines are used

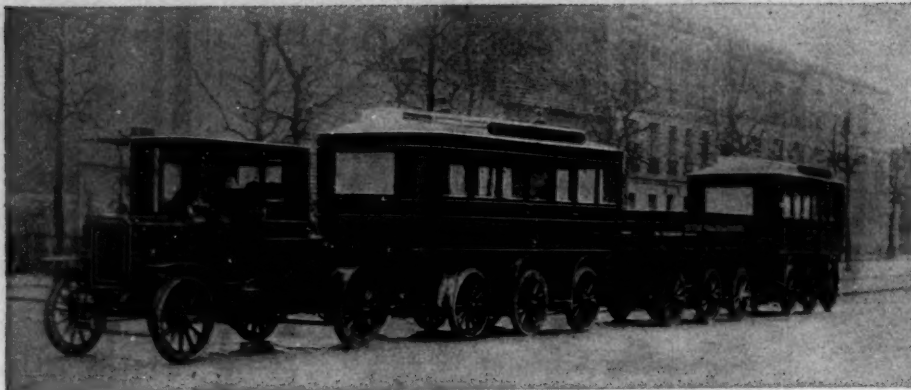
the objection is the great weight necessary to pull the trailers. In order to secure sufficient adhesion between the driving wheels of the engine and the road it is necessary to make the wheels very broad and fit them with a corrugated surface. This type of wheel injures roads very rapidly and when called upon to start on a heavy road on a grade particular havoc is wrought. According to the principles of locomotion, it is necessary to have the weight of the traction engine excessive to provide sufficient adhesion to pull a couple of trailers. This weight frequently endangers bridges and the road commissioners generally bar such engines from many of the leading thoroughfares. A great difficulty maneuvering with a traction engine and two trailers is the task of turning corners in that the first trailer "cuts in" more than the engine, and the second trailer "cuts in" still further, making it essential for the driver to make an exceedingly wide turn in order to round the corner, which turn interferes decidedly with other traffic. Another difficulty ex-

perienced with the traction engine and the trailer is that when traveling on cambered roads it is very difficult to cross from the right to the left of the road without working considerable injury to the surface in that the wheels of the trailers skid. This effect is similar, only to a much smaller degree, to that witnessed when a heavily loaded wagon is pulled out of a street car track, at which time the horses pull at right angles to the track to get the front wheels out and when the back wheels skid a considerable distance before becoming free of the rails. Still another disadvantage of the traction engine with its train of trailers is the impossibility of backing, which is frequently necessary when driving in crowded places and in the vicinity of factories. To this list of disadvantages can be added that of braking. In making a descent separate brakes must be provided for the traction engine and each of the trailers, and it is almost impossible for the driver of the engine to control the brakes on the trailers.

Having briefly reviewed these shortcomings of the traction engine with its train of trailers, it is now in place to consider what should be some of the attributes of a perfect road train such as the Renard claims to be. Consider first the question of adhesion. The adhesion of the driving wheels should increase in direct proportion with the load—that is, if a load is doubled the adhesion of the driving wheels should be doubled; if the load is trebled the adhesion of the driving wheels should be three times as great. The Renard train accomplishes this as follows: The locomotor always is propelled by its two drive wheels; when you add one trailer two additional drivewheels are added; adding another trailer adds two more drivewheels; and with each extra trailer two more drivers are brought into use. More drivers mean more adhesion, so that with



CHASSIS OF 75-HORSEPOWER GASOLINE TRACTOR



RENARD TRAIN WITH THREE COMBINATION CARRIAGES

every increase in load there is a proportionate increase in adhesion. In the question of road destruction it is worthy of note that the Renard train distributes its weight over a considerable road area. The weight of the locomotor always is the same. If the first trailer with its load weighs 4 tons, this weight is carried on six wheels, being 1,333 pounds to the wheel. If the second trailer has a similar load there is a weight of 1,333 pounds for each wheel, but this weight comes on a different road surface entirely. So the story continues with the addition of more trailers. In each case the weight over any particular point of the road surface is not increased and consequently the wear and tear on the road is no greater than that occasioned by the passage of so many separate vehicles, each carrying a load of not more than 1,333 pounds to the wheel. The problem of steering, as already mentioned, is well answered by the Renard train in that the steering of the five vehicles—the tractor and four trailers—is as easy as that of a single vehicle. In turning corners or climbing over the camber of the road there is no skidding of the wheels on the trailers. Braking on all of the trailers is controlled by the driver of the locomotor; when he brakes the loco-

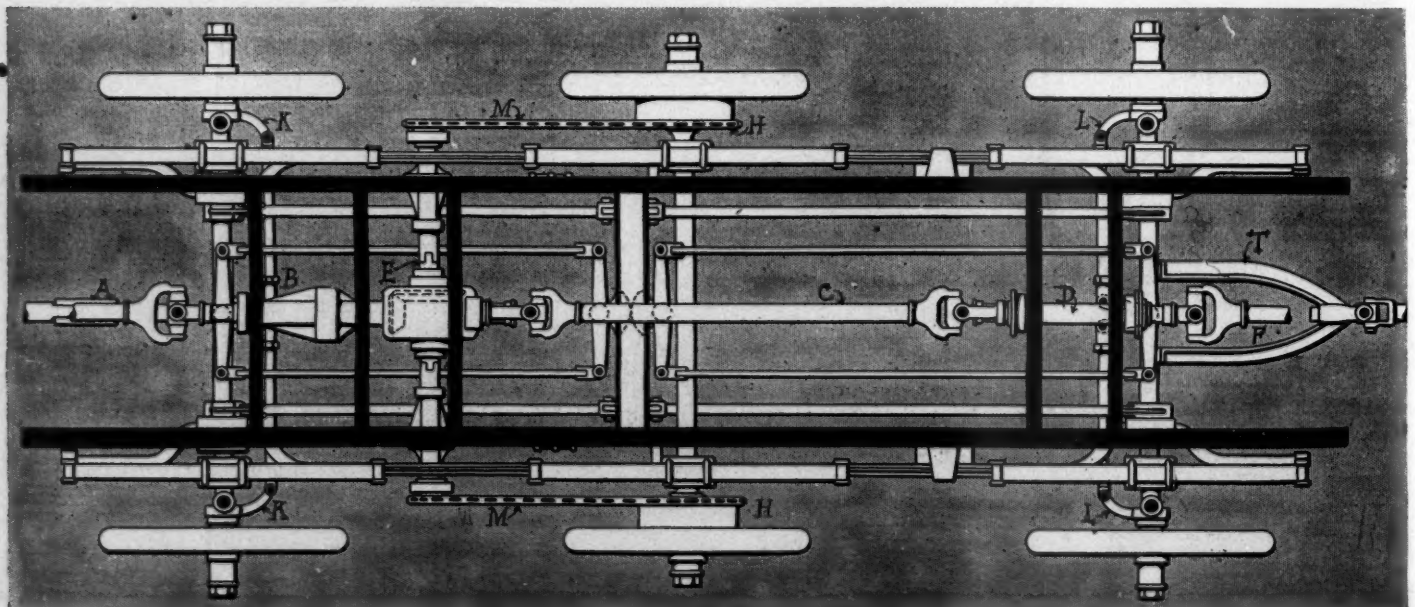
motor wheels he correspondingly brakes the wheels on all the train of trailers.

In a brief analysis of the mechanical features of this train the reader's attention is first directed to the method of transmitting power from the locomotor to each of the trailers and for which attention is directed to the two side and plan drawings of the chassis of one of the six-wheel trailers. The locomotor is shaft-driven and extending from the rear is a continuation of its propeller shaft which is coupled by universal joint with a short shaft A seen in the plan drawing. This shaft is continued throughout the chassis length but designated in different places as shaft B, shaft C, shaft D and shaft F. On shaft B is a bevel gear meshing with another bevel on the jackshaft E and on the ends of this shaft are sprockets for drive through chains M to other sprockets H on the center drivewheels of the car. A differential is incorporated with a cross shaft, or jackshaft E. In each truck or trailer is an exact duplication of this drive system, all parts of the different shafts being united by universal joints, making it possible for the train to round any corners. One trailer does not pull another—all start, travel and stop in unison.

A short consideration of how the turn-

ing is accomplished is next in order: Reference to the plan drawing will show that the front pair of road wheels K are provided with standard style of steering knuckles with tie rod uniting them and that similar steering knuckles and tie rod are fitted on the rear axle at L. Extending throughout the entire length of the train is a system of steering connections under the control of the driver. Also combined in this system of steering is the use of a peculiar tiller T extending from the rear axle of each vehicle and by which a coupling is formed with the following vehicle. The length of this tiller is so calculated with reference to the length of the chassis between the front and back axles that in turning corners this tiller, acting in conjunction with the turn given the wheels, causes the wheels to track.

Next comes the peculiar six-wheel construction as well as the use of a novel semi-elliptic three-spring suspension on each side. For a study of this the reader's attention is directed to the two side illustrations of the truck. These three springs are not shackled or bolted directly to the chassis frame but are associated with it through a complex system of levers. First of all come two large levers X and Y, the first pivoted on the front axle at X2 and linked to the forward end of the front spring at X1 and Y pivoted on the rear axle at Y2 and linked to the back end of the rear spring at Y1. These levers are at their adjacent ends pivotedly connected at S. Two other levers are employed, which are much shorter, one marked W, the other Z. W is pivoted at its center through a bracket W2 to the frame and at its front end is shackled to the forward spring and at its rear end is hinged to a lever W1. This lever bolting

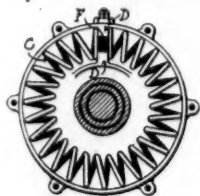


PLAN VIEW OF TRAILER IN RENARD TRAIN, SHOWING CONTINUOUS PROPELLER SHAFT



to the intermediate spring on top and to the lever X at the bottom. The lever Z is similarly mounted, being attached to the frame at Z2 and connected through a lever Z1 with the intermediate frame and the lever Y while at its rear end it is shackled to the back spring. This peculiar spring suspension permits of the center drivewheels passing over an obstacle without the wheels of the front or back axle leaving the ground and also allows of any of the six wheels falling into a depression without throwing strain upon any part of the chassis. It might be further mentioned that the wheels of the front or back axle can pass over obstructions without raising any of the other wheels from the ground. The center of the front and rear springs is supported direct on the axles as is that of the middle spring.

But one other point peculiar to this Renard train will be referred to in this brief review of its many interesting parts. When traveling on a road and this train



is required to make a curve of decreasing radius, the locomotor is making a smaller circle than the second trailer and the second trailer is describing a circle of less

diameter than the succeeding trailers. This means that the drive wheels on the locomotor are traveling less than the drive wheels on the trailer following and that the drivers on the first trailer are traveling a shorter distance than those on the following trailers. But the reader will remember that the driving wheels on the locomotor as well as those on all of the trailers are compelled to revolve at the same speed as the driveshaft continued through all the trailers revolves at the same speed and, consequently, turns all of the drive wheels at the same speed. When turning a corner of decreasing radius the

driving wheels on some of the vehicles must slip slightly along the road. The maker anticipated this, and to avoid any slipping and the consequent strain on the gears he uses a style of spring sprocket H on each of the drive wheels. This sprocket is illustrated elsewhere and is briefly this: Instead of bolting the sprocket direct to the wheel he couples it through the medium of a spring C, one end of which rests against lugs D on a plate bolted to the wheel hub and the other against the lug F which is on the sprocket portion. Thus when one wheel is compelled to travel slower in making such a turn the spring is compressed as indicated in one illustration where F and D are partly separated and as soon as the train resumes a straight course this spring comes back to its normal position.

Readers may be wondering as to the possible weight of the Renard train and its several parts as well as the horsepower of the locomotor. The total weight of the Renard train is approximately 10½ tons and the horsepower of the locomotor 75. Of this weight 3 tons belong to the tractor. The first empty van, or trailer, weighs 2 tons and each of the others slightly less. In repeated tests the fuel

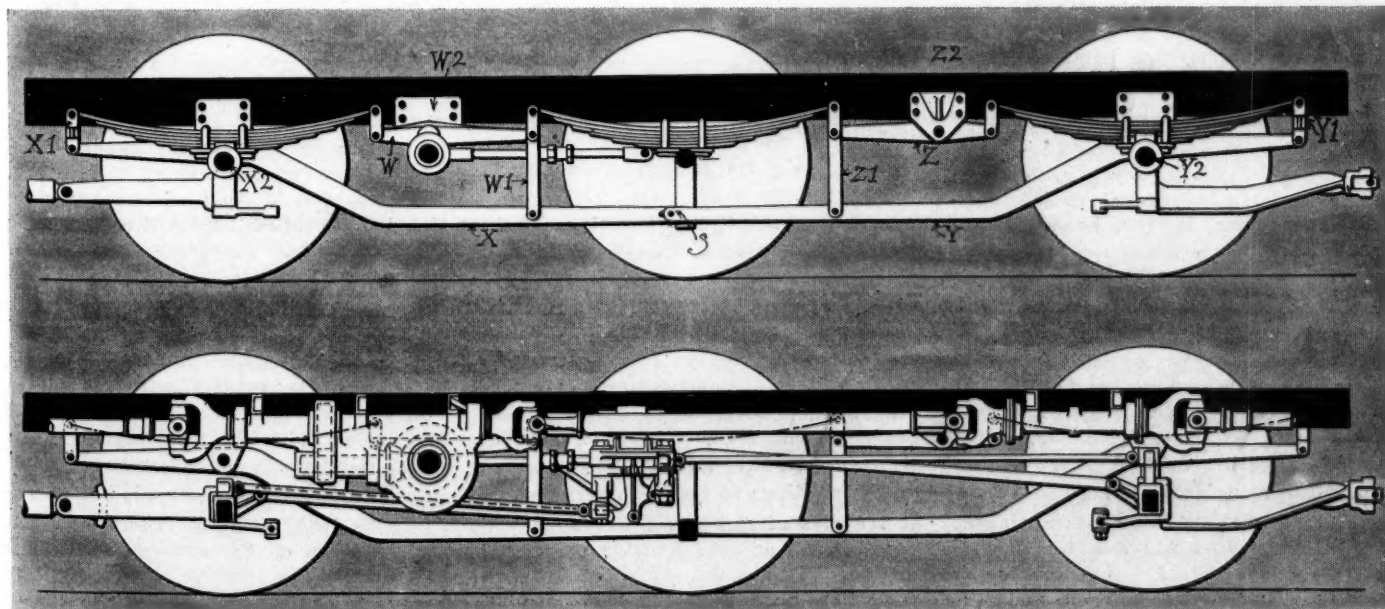
consumption for a four-trailer train is practically 3½ gallons of gasoline per hour and in repeated tests a speed of 10 miles an hour is possible with freight vehicles. The train is manufactured by Ed Surecouf & Co., Billancourt, France, and has selling agents in many countries.

### NEGROES ARE INDEPENDENT

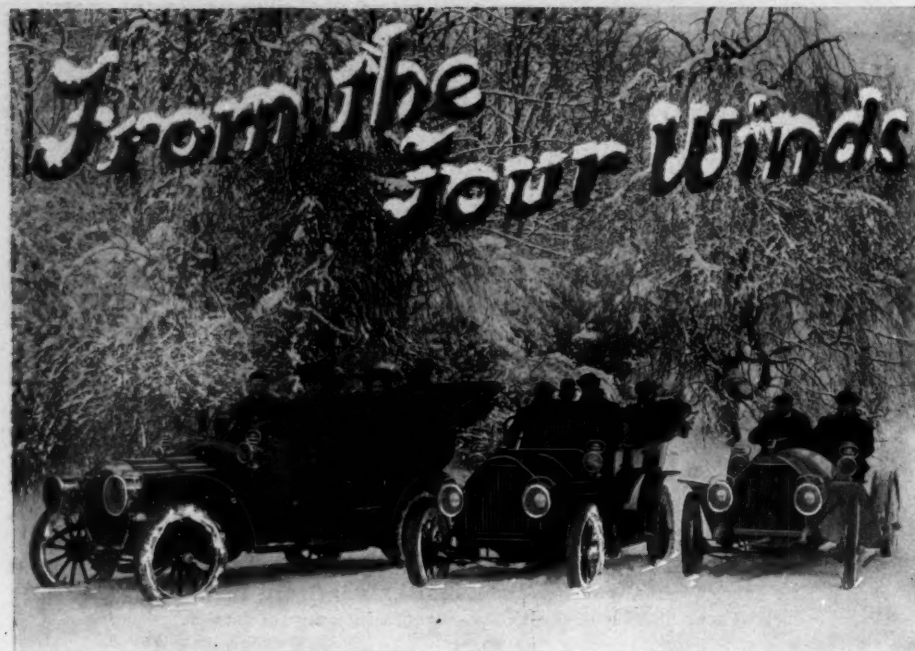
Following the enforcement of the Jim Crow law, caused by the city council putting into effect a city ordinance providing that negroes must occupy back seats on the street cars, the colored men of the city have boycotted the street cars and started a motor transportation line. Two steam sightseeing cars have been bought, and run on a regular schedule through points frequented by the negroes and along lines of travel popular with them. Few black faces are seen on the street cars. Another venture in regular passenger transportation by automobiles is to be undertaken by the Savannah Automobile Sightseeing Co., which runs three large sightseeing cars to the points of interest in and about the city. A franchise has been secured from the city council giving the right to establish a regular passenger line between the north and south ends of the city.



RENARD TRAIN WITH ENCLOSED FREIGHT TRAILERS



SIDE ELEVATION OF SIX-WHEELED RENARD TRAIN CHASSIS, SHOWING SPRING SUSPENSION



THREE THOMAS CARS IN CENTRAL PARK, NEW YORK

**New Club in New York**—The motor club of the West Side Y. M. C. A., of New York, has been formed. This Y. M. C. A. branch has maintained for 2 years a motor night school.

• **January Parts Imports**—The dutiable imports of motor car parts in January last were valued at \$61,133, as against a value of \$68,748 in January a year ago. During the 7 months ending January, 1907, these imports amounted in value to \$290,836, an increase from \$204,805, which was the value during the corresponding period of the year 1906.

**Talk on Light Subject**—George E. Risley, of the Electric Vehicle Co., addressed the rivers, bridges and roads committee of the Connecticut legislature, now in session at Hartford, on the advisability of having all vehicles of whatsoever tire equipment or description, carry a light at night. This measure has the endorsement of all state motorists and indications point to its enactment at an early date.

**Lots of Trouble**—During the progress of a fire at L strete, in Washington, D. C., last week, a Maxwell car figured in a rather unique incident. The car in the hands of an inexperienced negro driver accompanied by two friends succeeded in passing over the hose laid in the street and ultimately collided with one of the trucks of the fire department, seriously damaging it and putting three heavy scaling ladders out of commission. At the hearing it appeared that Thomas Williams, the driver, was a motor car washer at the garage of the Maxwell-Briscoe Motor Co. at 1028 Connecticut avenue. After an arraignment, the judge imposed \$10 fine for driving over the hose of the fire department, \$30 for driving the machine while in an intoxicated condition and for driving without the consent of the owner, and \$40 for col-

liding with the fire department truck. The pleasing feature of the incident for the Maxwell people was that while the fire department stated that more than \$50 damage had been done its truck and equipment, the motor car was uninjured.

**Rambler for the Herkomer**—It is expected that the Rambler will be a competitor in this year's Herkomer tour, although not nominated by an American. Carl Hirsch, a publisher at Cronstadt, Baden, Germany, while in Chicago last week purchased a 45-horsepower four-cylinder Rambler, with the expressed intention of putting it into the German classic.

**Lima Club Formed**—Motorists of Lima, O., have organized a club and elected as trustees E. R. Curtin, C. F. Lufkin, E. T. Mitchell, F. T. Cuthbert, H. S. Moulton, Dr. S. A. Creps, H. A. Mack, William G. Wemmer and C. D. Crites. Mr. Lufkin is president, Mr. Curtin vice-president, Mr. Cuthbert secretary and Mr. Mitchell treasurer. One of the aims of the club is to bring about friendly relations between the farmer and the motorist. The club proposes to help the farmers secure better roads and to prosecute known violators.

**Good Roads Activity**—Carrying out the suggestion of State Highway Commissioner Hunter that the road supervisors of the various counties of Pennsylvania form associations to enable them to work together to better advantage, no less than twenty-five of the sixty-six counties in the state already have formed such organizations. Commissioner Hunter, or some of his assistants, have addressed these organization meetings to excellent purpose, and at the present rate the entire state will have been so organized within the next 6 months. The benefits of these county organizations already have become apparent, for the bulk of the applications for state aid are now made with a view of doing the

greatest good for the greatest number of residents, and there is a notable decrease of the here-and-there improvements which benefited a single locality to a limited extent, it is pointed out.

**Chairmen Selected**—President Swan, of the Quaker City Motor Club, has announced his committee chairmen to serve during the ensuing twelvemonth. They are as follows: Membership, A. T. Stewart; house, Nathaniel Hathaway; contest, E. C. Johnson; press, E. H. Fitch; auditing, L. D. Berger; law and ordinances, G. Douglas Bartlett; good roads and highways, A. E. Maltby.

**Jack Tar a Motorist**—Captain George Graham, of the steamer Erskine M. Phelps, is a motorist. When the steamer arrived in Baltimore last Friday the attention of those on shore was attracted to a big up-to-date touring car which was strapped on the deck of the vessel. When the captain and his wife went on shore the car was landed and they started out for a ride about the city around the city and adjacent roads. When the Phelps sail this week the car will be returned to the deck, not to be used again until the far away islands of the South Pacific are reached.

**Seek a Country Home**—The membership of the Riding and Driving Club of Baltimore, recently organized, has been extended to the owners of motor cars. The idea of the organizers of the club is to make a little cottage on the Joppa road, which they have rented, as much like an old-fashioned country inn as possible, and one of the charms of the club will be its informality. Later on when the resources of the club become sufficient the managers intend to buy a big farm, where farm life as it really is may be enjoyed by the city motorists, as well as those who are interested in driving. In the meantime the little cottage on the Joppa road will be a handy stopping off place.

**Examine Rambler Motor**—Experts took down the motor of the 1904 Rambler surrey type 1, which was driven in the non-engine stop run of 2,002½ miles by Van Evra Martin, of Milwaukee. The examination was made by Virgil Oldberg, M. E., of the Armour Institute of Technology, and Edward B. White, head of the instruction department of the American School of Correspondence. They found that the replacement of the parts of the engine showing wear would cost, including the time, \$7.60, and that the entire car, including wheel and transmission bearings, could be put in perfect condition, with the exception of paint, finish and tires, at a total cost under \$25. The total time between the starting of the motor February 21 and its relinquishment to the engineers on the 28th was 168½ hours, of which time the car had been on the road approximately 153 hours. The total mileage was 2,281, and up to the time of stopping the motor 2,002½. The gasoline consumed for the 2,000 miles was 137½ gallons.



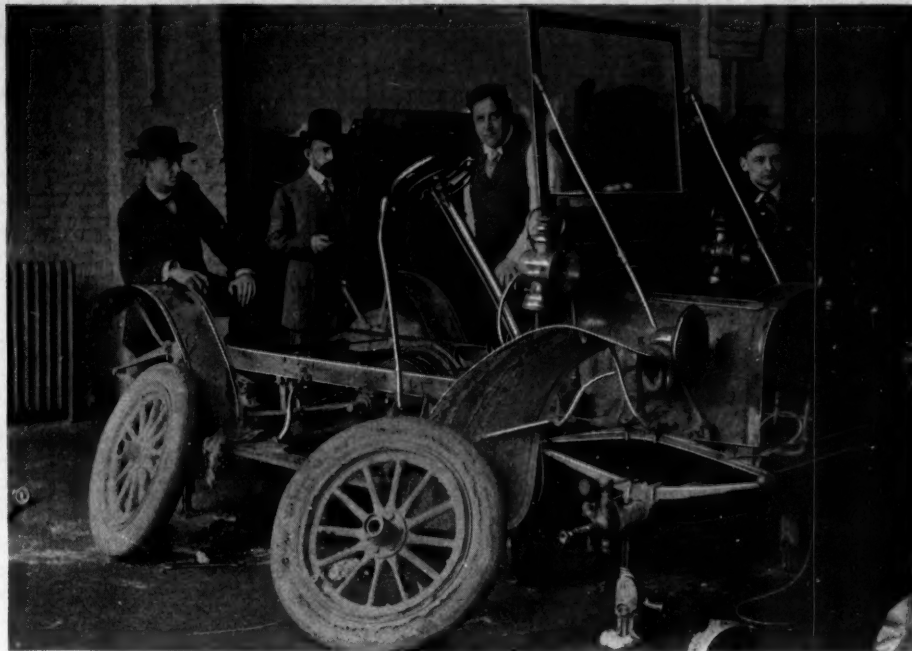
**Wants Pardington to Speak**—A. R. Pardington has been invited to address the miles to the gallon. This, however, includes 15 hours when the car was not in motion. The oil consumption was  $19\frac{1}{2}$  quarts. Figuring the gasoline at 18 cents per gallon and the lubricating oil at 50 cents, the fuel cost aggregated \$24.75.

**Women's Club Formed**—The Chicago Woman's Motor Club has been formed, and it is the intention of the organization to hold a floral parade in May. The officers of the club are as follows: President, Mrs. C. H. Foster; vice-president, Mrs. A. F. Chase; treasurer, Miss A. M. Andrews; secretary, Mrs. N. J. Boardman.

**Pittsburg's Workers**—President Edward Kneeland, of the Automobile Club of Pittsburg, has named these standing committees for this year: Membership, C. M. Miller, Paul C. Wolff and C. P. Matheson; house, E. J. Kent, Dr. John A. Hawkins and Philip S. Flinn; runs and tours, Thomas R. Hartley, John C. Bragdon, E. J. Kent, W. L. Dixon, Philip S. Flinn, W. N. Murray and C. M. Miller; laws and ordinances, E. J. Kent, P. C. Wolff and Dr. John A. Hawkins; auditing, M. F. Leslie, A. A. Fraunheim and W. A. Heyl.

**Six-Cylinders for Vanderbilt**—Two six-cylinder racing cars will take part in the American eliminating trial for the Vanderbilt cup race. In addition to the Ford six-cylinder which Henry Ford is said to have in process of construction at the Detroit factory, George C. St. John, sales manager of the St. Louis Car Co., announces that an American Mors six-cylinder car will be nominated by his concern. The Dragon people are said to be contemplating nominating a four-cylinder, with John Haynes, now connected with the New York representatives of the Dragon, as driver. H. N. Harding, the Englishman who handled the English Daimler in the hill-climb and the Haynes in the American eliminating trial, will be at the wheel of the American Mors.

**Pennsylvania's Clubs**—The state of Pennsylvania can now boast of nearly a score of clubs, the latest addition being the Motor Club of Harrisburg, just organized. It already is a most thriving youngster, boasting of a membership of 130, including many of the most prominent business and professional men in the capital city. At the first election last week ex-Mayor Vance C. McCormick was elected president; Oscar C. Robertson, first vice-president; R. R. Buvinger, second vice-president; Charles C. Cumbler, third vice-president; J. Sidney Sible, secretary; John C. Nissley, treasurer. The board of governors is made up of Dr. John Oenslager, Herbert F. Rawll, C. G. Nissley, James A. Bell, James McCormick, Jr., Roy Senseman, A. Stees, Frederick D. Carney and Howard Jenkins. The exhibitions and runs committee already has outlined plans for a 2-day endurance run in the latter part of April, while a parade and other



EXAMINING VAN EVRA MARTIN RAMBLER AT END OF NON-ENGINE STOP RUN

features are on the list of summer fixtures. congress of road builders to be held in connection with the fourth annual convention of the American Roadmakers' Association on the subject of motor highways and particularly on the proposed Long Island parkway.

**Quaker Hill-Climb**—The contest committee of the Quaker City Motor Club, E. C. Johnson, chairman, reported at the last meeting that if the requisite permission can be secured from the Philadelphia and Montgomery county authorities its monster Decoration day hill-climb will be held on City Line hill, from the East river drive in Fairmount park to the top of the steep grade at Belmont avenue. This will make a course of an even mile, with the hardest work in the middle half. The card will be made up of eight events, the classification being according to catalogue price.

**New Yorkers Expanding**—Ambitious plans for the expansion of the New York Motor Club are on foot. They embrace the leasing of an entire house for club purposes, with a workshop and laboratory annex for the use of the technical committee. Ample financial arrangements have been made among the members for the furnishing of the house. A special committee is now in search of an available and convenient building. It also has been decided to increase the number of directors. Pending the passage of the necessary amendment to the bylaws the following well-known motorists have been appointed to serve as an advisory committee as practical members of the present board: A. R. Pardington, S. A. Miles, George McKesson Brown, Alfred Reeves, John Kane Mills, Tom Moore and C. B. Rice.

**Good Work by Club**—The Cleveland Automobile Club is doing a good work in acting as an intelligence bureau where drivers and those seeking drivers can get

together. The bureau was formed to assist owners in securing efficient operators on short notice. The matter was given much publicity through the daily press, and already a number of drivers have registered with Secretary Goddard, of the club. No fee will be charged either to the driver or the owner.

**Signs Made by Convicts**—Captain Collins, of the prison department, has arranged to furnish signs made at Clinton prison, Buffalo, to be used to mark the country roads. The necessity for sign-boards has been brought about largely by the construction of good roads and the use of motor cars, making it much more essential that the roads should be marked than in the days when highway travel was comparatively slight. It is hoped with the assistance of the good roads commissioners and those who are enthusiastic in highway improvement that a large percentage of the main roads of New York state will be equipped with sign-boards this year.

**Mayor Wants Faster Pace**—In line with his statement concerning the present much-too-slow speed rate, made at the banquet of the Automobile Club of Philadelphia last week, Mayor Weaver, of that city, took occasion at the meeting of the Fairmount park commission to suggest that the present maximum rate in the park be increased from 7 to 15 miles an hour. "Nobody observes that nonsensical limit," he said. "The commissioners themselves do not do so, and there is no sound reason why it should not be increased. Other cities and states find a 15-mile maximum perfectly safe, and Fairmount park can stand the same rate. The present limit only serves as an excuse for some superserviceable guard to make himself obnoxious." The board referred the matter to its committee on superintendence and police for consideration.



# LEGAL LIGHTS AND SIDE LIGHTS



## CHANGING JERSEY LAWS

New Jersey's motor law seems to require considerable revamping, and in late years each succeeding session of the legislature witnesses marked changes in the laws governing the operation of motor vehicles within the state limits. The present session is no exception to the rule. Senator Freylinghuysen, sponsor of the present law, has introduced an amendment increasing the number of inspectors to twenty-five regulars and twenty-five civilians. The former are to get \$3 a day; the latter will serve "for the good of the cause," and will be made up of a quarter-hundred law-abiding motorists invested with police powers just the same as their paid brethren. Another amendment calls for a chief inspector at a salary of \$1,500 per annum, while still another contemplates a 3-days' license fee of \$1 for tourists. State Commissioner Smith estimates the total receipts of the motor vehicle department up to the end of the fiscal year on May 1 next at upwards of \$80,000, which sum, after deducting administration expenses, will go to the repairing of the improved roads of the state. Up to January 1 \$62,233.91 of the commissioner's estimate was in hand as the result of 13,759 vehicle registrations and 15,269 licenses issued to drivers. Jersey City, Trenton, Newark and Camden, in the order named, turned in the bulk of the money from these sources—over \$50,000—the remaining \$12,000 coming from the thirteen smaller agencies. The maintenance of the registration and licensing department amounted to \$4,276.

## GLEN ECHO COMPROMISES

The town council of Glen Echo, Md., has amended the ordinance regulating the running of motor cars within the limits of the town by fixing the speed limit at 12 miles an hour instead of 6. The action of the council was the result of a conference with representatives of the clubs of Baltimore and Washington as well as members of the protective associations of the two cities and owners of cars in other sections of Maryland. During the conference the motorists admitted their defeat in their efforts to prove the town of Glen Echo and Montgomery county had no jurisdiction over the conduit road in criminal cases, and suggested that the Glen Echo ordinance be amended so as to conform with the state law which fixes the speed limit at 12 miles an hour. In consequence of the action of the Glen Echo town council the motorists have promised to assist the authorities in every way to have the law enforced. They even have agreed to drop all litigation, including the case of Mahlon A. Winters and others now pending in the circuit court at Rockville, Md., which was

an appeal from the action of Mayor Garrett in fining Colonel Waters \$50 and costs for an alleged infraction of the ordinance of Glen Echo. The motorists were anxious to have Marshal Charles P. Collins, who was so active in arresting owners of cars last spring, summer and fall, dismissed, but Mayor Garrett would not listen to any argument on the subject.

## TOLEDO'S NEW SCHEME

Up until the present time Toledo has been in a class all its own as regards speed limits and motor car licenses. There was an old city ordinance which limited the speed of motor cars in the city boundaries to 10 miles an hour but there were no means of enforcing the law because cars were not required to be numbered and there was no way of identifying them. The city council floundered about for several months and finally has passed an ordinance making it compulsory for all owners to take out licenses and to exhibit the license number from the rear axle of the car. Visiting motorists are required to deposit \$5 with the city treasurer within 24 hours of their entering the city. On their departure, if they will return their number, \$4 of this sum will be returned to them.

## ALABAMA'S LATEST BILL

Alabama motorists are pondering over senate bill 150, which is now before the legislature:

Section 1—Be it enacted by the legislature of Alabama, that, on and after the passage of this act, it shall be unlawful for any person running or operating a motor car over or along the public highways of this state, to fail to bring such motor car to a full stop on meeting any person traveling over or along such public highways, in buggies or wagons, or on horseback, and keep such motor car standing until he has discovered that the horses or mules attached to such buggies, wagons, or horses or mules which are being ridden, are not afraid or frightened at such motor car.

Section 2—Be it further enacted that any person who violates the provisions of section 1 of this act shall be liable in the courts of law to any person for injury to such persons or his property, from a failure to comply with the provisions of section 1 of this act, and in addition to the civil liability herein provided for, shall also be guilty of a misdemeanor, and on conviction shall be fined not less than \$25, or more than \$100.

## BLOW FOR ROAD HOGS

At the hearing in the Massachusetts legislature on the recommendation of Governor Guild to give the horse-drawn vehicle the right of way, which would if passed legalize road hogging, there was only one person present to speak for the bill. That one did not seem to know just what he favored, and the hearing was closed in a few minutes. The committee probably will report no legislation necessary. On the bill to prohibit motor vehicles from going on private roads the committee reported in favor of it. Leave to withdraw was reported on the bill to protect those letting cars for hire.

## BOTSFORD BILL HALF THROUGH

By a vote of 98 to 5 the Missouri house has passed the Botsford motor bill, requiring a state license of \$5 on each motor car, which will permit the operation of the motor car any place in the state. The bill must pass the senate before it becomes a law. At present each county in the state licenses motor cars, and an owner desiring to run his machine in more than one county must pay a separate license in each county through which he passes. The Botsford bill limits the speed in cities and towns to 10 miles an hour in residence districts and 8 miles in business districts. A speed of 15 miles is permitted in the country. On the sale of a machine, except by a dealer, the license shall expire and a new one must be procured. In procuring a license the owner of a machine must furnish the secretary of state with his name and a description of the motor car. A person living outside the state is not required to obtain a license unless his machine remains in the state more than 20 days. The bill also requires the registration of drivers, the certificates costing \$2. No certificates shall be issued to anyone under 18 years old.

## LIBERAL IN SAVANNAH

The newly elected mayor and aldermen of the city of Savannah, Ga., a majority of whom are motor car owners and drivers, have framed up an extremely liberal law to take the place of the old and antiquated statute which prohibited motor cars running in the city at a rate over 8 miles an hour. The new ordinance, which has been placed on its first reading and which will come up for passage at the next meeting of the council, allows the motorists to run their machines in the city at a rate of speed not exceeding 15 miles an hour. Before drafting the ordinance the mayor, Alderman Gordon, the chief of police and a number of aldermen held some tests with a motor car, equipped with a speedometer, on one of the paved streets. It was decided after the tests that 15 miles an hour was a safe speed to allow. It is, however, provided in the new ordinance that no person may run his car recklessly at any speed. This is intended to apply to fast or careless running of machines on crowded streets.

## WORKING FOR NEW BILL

Active work is being done by the Pennsylvania Motor Federation in the interest of the new motor vehicle bill prepared by it. Twelve thousand circular letters to motorists of Pennsylvania left the federation headquarters last week asking the aid of each resident of the state holding a license to put this through. A committee also is at work at Harrisburg.





## BRIEF BUSINESS ANNOUNCEMENTS

**Columbus, O.**—The American Castings Co. has opened a factory here.

**Harrisburg, Pa.**—The Hart-Kraft Motor Co., of York City, has increased its capital stock from \$5,000 to \$300,000.

**Brooklyn, N. Y.**—The Eclipse Auto and Construction Co. has opened an agency for the Smith at 101-107 South Sixth street.

**Seattle, Wash.**—The Pacific Coast Automobile Co. is building a new garage on Broadway. It is to be a six-story building 124 by 64 feet.

**Columbus, O.**—The local agency of the Reo Automobile Co. has been moved to the old quarters of the White company, at 69 East Spring street.

**Newark, N. J.**—The Motor Car Co. of New Jersey will add an accessory department to its business. The new department will be opened on April 1.

**Pittsburg, Pa.**—The Rainier company has been negotiating with the Oakland Livery Co. for the sale of its stable on Henry street, and, if it is successful, will at once commence the erection of a large garage.

**Atlanta, Ga.**—An involuntary petition in bankruptcy has been filed against the Piedmont Motor Co., of 88 North Pryor street. The Piedmont company, which at the time of its organization had a capital stock of \$5,200, admits its inability to pay its debts, and S. R. Johnson has been appointed receiver.

The company has been doing a general selling and repairing business. H. C. Stockdell is the president of the concern.

**Newark, N. J.**—The Ellis Motor Car Co., of 22 Halsay street, agent for the Pierce, has taken the agency for the Knox.

**Champaign, Ill.**—Wilson Richmond has purchased the L. T. Daniels barn on North Neil street and will have it remodeled into a garage.

**New York**—Albert J. Otto has taken a lease of the garage building adjoining the premises of the American Locomotive company at Broadway and Sixty-second street and will fit it up as a motor mart.

**New York**—The Daimler Mfg. Co., of Astoria, is buying a large amount of machinery for the new plant which is to be erected to replace the one recently destroyed by fire.

**Decatur, Ill.**—The Curtis Motor Truck Co., of Decatur, has been incorporated with a capital stock of \$250,000 to manufacture motor trucks. The incorporators are E. A. Curtis, J. P. Drennan and A. G. Bolen.

**Newark, N. J.**—Jacob Dawson, who has been associated with C. E. Beach in the local agency of the Rambler Co., has formed a partnership with J. W. Mason, and will look out for the interests of the Stoddard-Dayton and Maxwell.

**Cincinnati, O.**—Sayers & Scoville, carriage and buggy manufacturers on Colerain avenue, are to build a motor car factory next to their present carriage plant. The company will devote all its attention to the manufacture of motor trucks. The new plant is to be six stories in height.

**Springfield, Mass.**—A new agency for the Reo and Premier will be opened here by Arthur L. Witherell. Mr. Witherell will have his headquarters in the garage of Woodward & Reopell, on Fort street, with sub-agencies in North Adams, Pittsfield, and some of the larger cities in the western counties.

**Toledo, O.**—Ezra Kirk, the former sales manager of the E. R. Thomas company, who has resigned his position, will open a garage here in partnership with his brother. A new building is going up on Jefferson street, between Tenth and Michigan streets, where they will establish their headquarters. They will act as agents for the Thomas.

**New York**—D. D. Martin, the general manager of the New York-Broadway Rubber Tire Co., at 1186 Bedford avenue, is about to install an accessory and supply department on the ground floor of his building. The tire department will be removed to the second floor and the new business will be under the management of

James F. Fairman, recently with Smith & Mabley.

**Montclair, N. Y.**—The Montclair Auto Station, the first garage to be established in this town, has gone out of business.

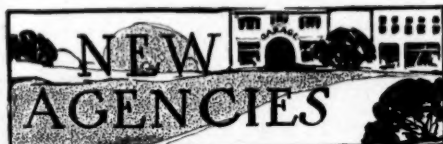
**Cleveland, O.**—Alfred Clum has been appointed receiver for the Williams Electric Vehicle Co., manufacturer of cars and supplies.

**Lansing, Mich.**—The Belle Isle Motor Co. has filed articles of incorporation with a capital stock of \$40,000, and will engage in the manufacture of engines.

**Williamsburg, N. Y.**—The Eclipse Automobile and Construction Co. is to open a garage in the former Empire Theater building in Williamsburg, where it will represent the Smith.

**Boston, Mass.**—The Puritan Motor Co., local agent for the Dolson and Mason, is now occupying temporary quarters in the Park Square motor mart, but will remove to the new motor mart on Irvington street as soon as it is completed.

**Pensacola, Fla.**—The Everglades Automobile Co., of St. Petersburg, Fla., is negotiating with the chamber of commerce for a location in this city. No action has as yet been taken, but the secretary has been directed to correspond with the company and learn some particulars concerning the size of the plant and of the site desired.



**Toledo, O.**—Toledo Car Co., Pope-Toledo.  
**Los Angeles, Cal.**—Lord Motor Car Co., Kisselkar.

**Waterloo, Ia.**—W. W. Eggers, Glide.  
**Wellman, Ia.**—W. J. Brown, Glide.

**Minneapolis, Minn.**—Twin City Motor Co., Mora.

**Minneapolis, Minn.**—Walter G. Benz, Jackson, Moline and Gale.

**Brooklyn, N. Y.**—Borough Automobile Co., Haynes.

**Indianapolis, Ind.**—Indiana Automobile Co., Pope-Hartford, Thomas and Baker.

**Indianapolis, Ind.**—Gibson Automobile Co., Logan truck.

**Cincinnati, O.**—Robert C. Crowthers Automobile Co., Royal Tourist.

**Syracuse, N. Y.**—Chase Motor Truck Co., Ford.

**Toledo, O.**—Kirk Brothers, Thomas.

**Williamsburg, N. Y.**—Eclipse Automobile and Construction Co., Smith.

**Los Angeles, Cal.**—James F. Morley, Coppock truck.

**Cleveland, O.**—American Auto Co., Aero-car.

**Cleveland, O.**—Boulevard Garage Co., De Luxe.

**Bellingham, Wash.**—Union Automobile Co., Cadillac.

**Philadelphia, Pa.**—Philadelphia Motor Car Co., St. Louis.

**Philadelphia, Pa.**—Philadelphia Auto Sales Co., Reliance, Jewel and Dolson.

**Garden City, L. I.**—Garden City Co. of New York, American Mercedes.



**Charlotte, Va.**—Charlotte Motor Car Co.; capital stock, \$10,000; to deal in motor cars and conduct a general repair business. Incorporators, A. Burwall, J. H. Pheleps and R. S. Hutchinson.

**Boston, Mass.**—Rush Motor Car Co.; capital stock, \$40,000; to operate a garage. Incorporators, J. H. Borroughs and Thomas Quirk.

**Brooklyn, N. Y.**—Park Circle Garage; capital stock, \$10,000; to manufacture, operate and store vehicles. Incorporators, J. A. Anderson, F. D. Skeal, of New York city; and F. L. Hagerty, of Brooklyn.

**Camden, N. J.**—Baltimore Avenue Automobile and Garage Co.; capital stock, \$35,000; to conduct a garage.

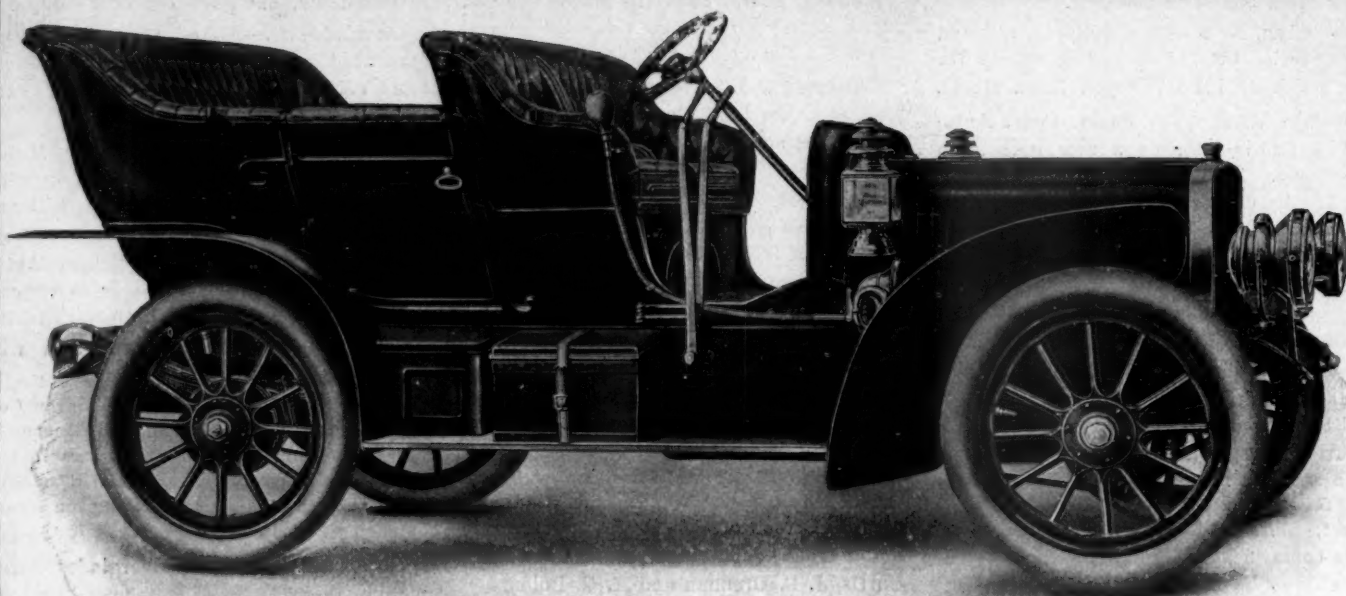
**Brooklyn, N. Y.**—Peerless Igniter Co.; capital stock, \$15,000; to manufacture and sell marine and motor car batteries and also deal in motor cars. Incorporators, J. H. Ashfield, W. E. Cowan and Albert Parmour, all of Brooklyn.

**Portland, Mo.**—Chicago Auto Car Co.; capital stock, \$2,000,000; to deal in motor cars and appliances. Incorporators, J. D. Manter and C. D. Fullerton.

**Detroit, Mich.**—Fishback Mfg. Co.; capital stock, \$10,000; to manufacture parts and do a general repairing business. Incorporators, R. W. Fishback, J. H. Smedley and John H. Smedley, Jr.

**Joliet, Mo.**—Bruce Motor Co.; capital stock, \$2,500; to do a manufacturing and mercantile business. Incorporators, R. C. Bruce, J. A. Freed and Anna B. Bruce.

# WINTON



## In Your Own Business

you regard experience as valuable?

That is to say, you increase the salaries of your employes as they increase in knowledge of the peculiar features of your especial line of business?

And, after your house has been in business so long a time that it knows, from *experience*, what mistakes to avoid and what precautions to exercise in order to secure the best possible results for your patrons and yourselves . . . . you consider that your house holds an advantage over newer houses that lack that experience?

Certainly you do, and legitimately so. And applying that same thought to the automobile business, isn't it altogether reasonable that the Winton Company, with experience antedating that of every other American company, and operating the greatest and best equipped factory, ought to produce the best of cars at minimized cost to the purchaser?

It is just this advantage which permits us to market \$3500 value in the Winton Type X-I-V at \$2500 and \$5000 value in the Winton Model M at \$3500.

We can give you further evidence of these facts, in detail, if you desire.

TYPE X-I-V—(Illustrated above) Four  $4\frac{1}{2}$  x 5 OFFSET cylinders, \$2500; Runabout, \$2500; Limousine, \$3500.

MODEL M—Four 5 x 5 OFFSET cylinders; selective, sliding gear transmission; four forward speeds, direct drive on third speed; multiple disc clutch, \$3500; Runabout, \$3500; Limousine, \$4500.

**THE WINTON MOTOR CARRIAGE CO. MEMBER A.L.A.M. CLEVELAND, OHIO, U. S. A.**

We conduct our own Branch Sales Depots in New York, Boston, Philadelphia, Pittsburg, Chicago, Detroit and London